

Live and breathe

*System Solutions for Home Mechanical Ventilation,
Sleep and Oxygen Medicine*

Product Catalog 11/07



Effective and flexible Patient Care at the Center of our Efforts

Solutions for the patient mean so much more than diagnosis and the initiation of standard therapy. Every single patient needs a specially tailored examination method capable of obtaining medical information relevant to his case. This calls for a broad therapy spectrum that can satisfy all patient requirements. As a specialist in this area of medical technology for several decades, Weinmann has acquired extensive knowledge and has made a name for itself on the international market with its high quality products.

When we refer to “products”, we don’t mean individual devices or this piece of software or that. We see ourselves more as a provider of treatment offerings, complete systems and service packages. Each solution contains highly effective and innovative care concepts that flexibly respond to individual customer requirements.

Whether it’s sleep apnea, chronic bronchitis or respiratory insufficiency, more and more people are suffering from serious respiratory disorders. Each of these diseases significantly reduces the quality of life of the persons affected.

emergency | homecare | diagnostics



Sleep Diagnosis



Sleep Therapy



Home Mechanical Ventilation



Oxygen Medicine



Patient Interface

They may suffer from fatigue, exhaustion, dyspnea, depression and even circulatory disorders or stroke, all of which can drastically affect the patients' day-to-day lives. Therefore, it's essential that they receive effective treatment which offers the greatest possible comfort and convenience and thus guarantees better patient compliance.

At all times and almost everywhere around the world, people are being cared for and effectively treated with products we make. In cooperation with our partners we strive to achieve the best therapy results within a functioning network of patients, treating physicians and cost carriers. We do this by following a strategy that concentrates our strengths and know-how on comprehensive therapeutic offerings and not just on individual devices. The patient is at the core of our efforts for the simple reason that we consider security and quality of life inseparable.

We invite you to take a look at the following pages and see for yourself the range of products and services we've designed and developed, always keeping close to people and their needs.

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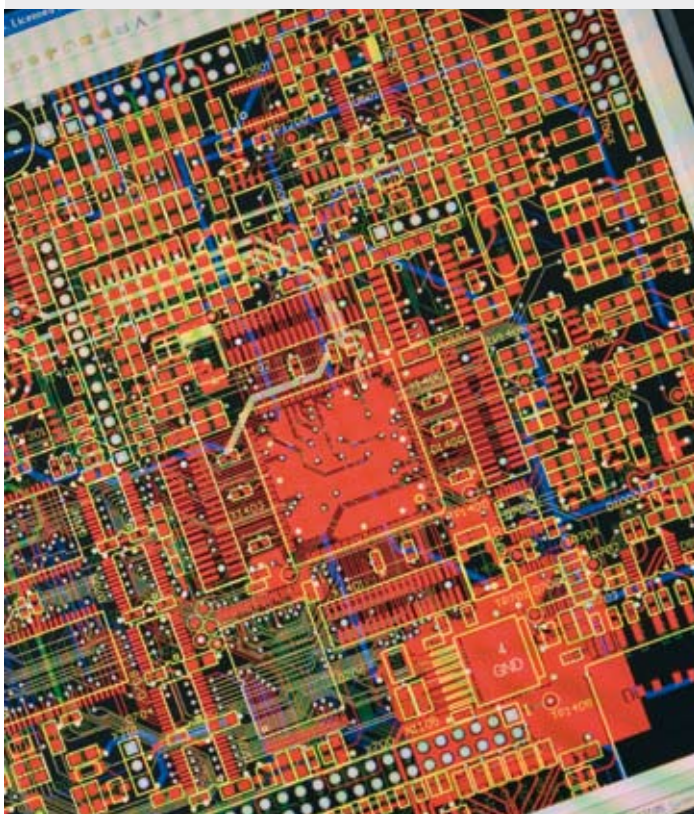
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System Provider Weinmann – Partner for Life

Successful treatment concepts implemented in intelligent solutions. Among decisive factors for the success of treatment are products finely tuned to each other, logically designed processes and customization. That's why it's so important for us to know exactly the needs of the customer, the treating physician and the patient. We rely on decades of experience in offering optimal therapeutic solutions with which we satisfy nearly all treatment requirements.

We have a comprehensive portfolio of high-quality products for sleep diagnosis and therapy, home mechanical ventilation and oxygen medicine, each of which is perfectly coordinated with the others. To our customers we offer the advantage of having complete responsibility for all system components in one hand.

Thanks to our modular system, we deliver customized and complete solutions for individual patients and medically trained users, such as the staff in sleep labs. Our innovative solutions in titration, diagnosis and therapy are implemented in individual and economical systems with long lifecycles and are supported by reliable service for installation, maintenance and updates through our network of certified dealers.

System Provider: Components we offer



Doctors and patients are at the center of attention. Today we offer them a range of services which include:

- **Our therapy solutions.** They range from varied forms of CPAP therapy and oxygen treatment to therapy concepts for home care ventilation. Each patient gets the treatment he needs plus the appropriate device and all the necessary accessories. We place a great deal of value on the high-quality connection of man and machine, which we refer to as Patient Interface. Our nasal and full-face masks fall into this category.
- **Our marketing.** Through two-way communication with target groups we make sure that our diagnostic and therapeutic solutions are understandable, that everyone is heard and that a dialogue with our customers and patients, physicians and health insurance companies has a chance to develop.
- **Economy.** By achieving a high diagnostic hit rate and good therapy compliance, we look after profitability in terms of prescribers, cost carriers and service providers.
- **Diagnosis concepts.** We offer sleep specialists our comprehensive know-how involving sleep lab operations: consulting, software for administration, data monitoring, diagnostic hardware and concepts for complete system solutions.
- **Finances.** We create financing models for single leased devices up to complete laboratory facilities.
- **Coordination.** Through active and frequent contact with doctors and the combination of varied medical specialties, we have created a competency network that benefits the patient in the form of high quality care.
- **The homecare provider** assumes responsibility for local patient services. Dealers have high-quality products and services and the necessary Weinmann-certified know-how for looking after patients.

Clinical studies prove benefits

Added to all that is our intense involvement in clinical research, represented by our Science + Research area. Its main task is to manage clinical studies that test selected medical technological solutions to determine their benefit for patients and users.

These studies have to be of high quality. Innovations prompted by clinical research can be successfully implemented only if a high degree of evidence and recommendation can be proven. That's why national and international trade fairs and seminars and exchanges with experts are so important for us.

Support and promotion of new ideas

We're also very much interested in young scientists who have attracted attention through their commitment, ideas and innovations. We show our interest by awarding the Weinmann prize, which is designed to promote promising scientists working in sleep research and medicine, and by presenting additional grants to support those scientists at many national and international symposiums and congresses.

Our demands for the best possible quality make their way through all areas of our business. At Weinmann new medical products are subjected to a standardized, certified validation process by Quality Management prior to their launch. The validation tests guarantee the products' efficiency and quality. Only then can a product become a useful part (e.g., a component in a sleep lab) of a complete solution.

Everything from a single source: lasting quality as cost advantage

This type of cooperative effort is most successful when both product development and product maintenance are in the hands of one party. Then you can be sure that all parts of the system share the same level of quality. That's an important condition for working efficiently and achieving the best results, making the right diagnosis and providing successful therapy.



WELCOME!

We, the employees of Weinmann, a family-owned and operated business, offer diagnostic, therapeutic, and life-saving devices and systems in the field of medical technology. Our wide range of offerings includes high-quality products and services in the areas of home care, emergency and diagnostics. Our internet portal gives you a good look at the selection of Weinmann products.

Our Center for Production, Logistics,
Service: Your address for delivery, pick-up
and device shipping

PDF downloads: image brochure,
catalogues emergency, homecare,
diagnostics

Login

Growing room
for ideas and innovations



Weinmann is a
selected site for 2007 in the Land of
Ideas

**Germany
Land of Ideas**



Selected Landmark 2007

emergency



Home
Ventilation and Monitoring
Defibrillation
Oxygen Systems for Emergency Vehicles
Stand-alone Monitoring
Transport Containers
Suction
Disaster Medicine
Information Portal

homecare



Home
Sleep Diagnosis
Sleep Therapy
Home Mechanical Ventilation
Oxygen Therapy
Patient Interface
Information Portal
Contact

diagnostics



Home
Pulse Oxymetry
Capnometry
OEM Partnership
Information Portal
Contact

company



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Careers / Jobs
Science + Research
Weinmann Academy
Trade Fairs and Exhibitions
Press Center
Information Portal

www.weinmann.de – Go online!

Versatile and always available

Do you need information about the products Weinmann offers? Are you looking for an updated user manual in your language, the newest product catalog or scientific background material? At *weinmann.de* you'll see all the information you need on several clearly laid out and easy-to-find pages at any time of day or night. More than 1200 PDFs and numerous high-resolution product photos are available for downloading. The Website also offers current job openings, press releases and a list of international Weinmann sales partners and lots more.

Everything under one big roof

Our Center for Production, Logistics, Service

Our Center for Production, Logistics, Service has been in operation in Henstedt-Ulzburg near Hamburg since 2006. Short ways, quick processing and competent service personnel with capacity to spare make this center different from the rest. Here Weinmann can centrally and efficiently coordinate its product maintenance and repairs plus stockkeeping and world-wide shipping.



Weinmanns Center for Production, Logistics, Service - your address for

- **Delivery**
- **Pick up**
- **Sending in devices for maintenance and repair**

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emergency | homecare | diagnostics

WEINMANN
medical technology



Sleep Diagnosis

Measure, determine, know: tracking down the disease

Daytime sleepiness, decreased performance and circulation problems can be the result of disrupted sleep. Therefore, people thus affected, who may also have trouble falling or staying asleep, should have a sleep check-up. With the help of a sleep diagnosis device, it's possible to tell if a disease such as sleep apnea is to blame. If the findings confirm the suspicion, the patient will be referred to a sleep lab.

There the patient will be asked for his medical history and will be examined (ECG, pulmonary function, X-rays or sonograms and sleepiness test). A diagnosis of apnea can be derived from the EEG made during the night and other parameters, such as air flow via the mouth and nose, eye and leg movements, oxygen saturation and snoring noise captured by electrodes and sensors. The recorded signals provide information about the different sleep stages and possible apneas and give the doctor information about the type of disease involved.

Weinmann has developed software that supports doctors in their decisions. According to the results of a study¹⁾ carried out in six renowned sleep labs in Europe, ARTISANA delivers an excellent analysis of polysomnographic data.

¹⁾ M. Schwaibold, Th. Ploch, W. Cassel, I. Th. Penzel, H.-F. Becker. Multicenter Study on the Variability of the Sleep Stage Scoring Algorithm ARTISANA Compared to Human Experts – Part II: Validation Phase, Abstract ERS, 114s, P793, 2005



Certified Quality
Management System
meeting EC directive 93/42/EEC,
Annex II (EN ISO 9001:2000/EN ISO 13485)



SOMNOcheck 2 R & K

Polysomnography in accordance with international standards

SOMNOcheck 2 R & K permits stationary and mobile polysomnography in accordance with Rechtschaffen and Kales. In stationary use, the data are transmitted to the control room by USB or Bluetooth or optionally via a local network. In mobile use they can be stored on the integrated, interchangeable CompactFlash (CF) card. All data for a complete polysomnography (including video) are visualized and analyzed with SOMNOlab software, which also supports sleep stage analysis with ARTISANA.

Benefits for you

- Channel combination according to internationally recognized standards for polysomnography
- Online use in sleep lab and clinic (USB or wireless)
- Compact, simple application on patient
- SOMNOlab software integrated video and audio signals (TCP/IP) for attended polysomnography
- Maximum integration: differential pressure sensor, all amplifiers, pulse oximetry, position sensor, Bluetooth module, etc. are contained in basic device



SOMNOcheck 2 R & K with trunk cable

- Mobile use up to 20 hours, several recordings possible; with rechargeable battery and interchangeable CF card, almost unlimited mobile use

SOMNOcheck 2

Superior sleep diagnosis that's mobile, safe and simple

Easy to operate and convenient to use, SOMNOcheck 2 is a mobile polygraph combining sleep apnea and PLMS screening functions in a single device. Interchangeable application graphics make sure that the electrodes are correctly connected to the device.



Back of SOMNOcheck 2

All recording technology is integrated in the housing, even two thorax effort sensors. There are no external connections. Four electrophysiologic channels, to be configured as ECG, EMG, EEG or EOG.

Additional functions

- Additional invoicing for ECG and EMG
- Patient-oriented application assistance for outpatient use
- Wireless data transmission in online use
- Intelligent battery pack prevents mismeasurement

Integrated recording functions

- Recording parameters: respiratory flow, snoring, heart rate, oxygen saturation, body position, pressure (CPAP, BIPAP, smartPAP)
- Four electrophysiological channels available for ECG and leg-EMG, for example, plus any other configuration
- Integrated effort sensor (piezo-crystal technology)
- High quality of ventilation therapy monitoring due to differential pressure measurement

Clear data preparation

- Online representation of recording on a PC
- Can be used with SOMNOlab and SOMNOmanager software

SOMNOcheck effort

Simple diagnosis and therapy monitoring system for sleep-related respiratory disorders



SOMNOcheck effort is an outpatient device for sleep diagnosis and therapy monitoring. The software offers programmable recording periods, fast data transmission, automatic analysis function with manual editing capability and selectable analysis criteria.

- Recording parameters: respiratory flow, snoring, heart rate, oxygen saturation, body position and, if necessary, nCPAP pressure
- Recognizes apnea, hypopnea, oxygen saturation, heart rate variations and provides nCPAP therapy monitoring in addition to screening
- Records thoracic and abdominal movement of the patient and distinguishes between central, obstructive and mixed apneas
- Is equipped with a pulse oximetry sensor and a combo sensor for respiratory flow and snoring noise
- Hardware can be easily attached in just a few steps
- No annoying cable connections

SOMNOlab

Complete diagnosis station for individualized patient care

The SOMNOlab sleep diagnostic system reduces routine work in the sleep lab and frees up more time for patient care.

To ensure enough computing capacity for the configuration, Weinmann delivers the SOMNOlab sleep diagnostic system with a pre-configured and system-tested visualization and analysis system.

For efficient work in the sleep lab:

- Quick hardware application on the patient: headbox and bodybox are applied directly on the patient.
- Impedance measurement and application check of the electrodes take place on site.
- Complete freedom of movement and independence for the patient, thanks to the simple disconnection and reconnection of the transferbox at the bedside.
- Recording of all standard parameters, as defined in the national and international guidelines (AASM, DGSM).



Easy handling



Bodybox and Headbox

SOMNOlab components



■ Bodybox:

In just a few steps the bodybox is applied to the patient's abdomen. With integrated pulse oximetry sensor, respiratory flow/snore sensor, nasal cannula or pressure measurement hose, thorax and abdomen sensor (with pulse oximeter and pressure and position sensors).



■ Headbox:

Applied to the patient's upper body, connected to the neurological devices and sensors. LEDs flash during the impedance test if the sensors have been connected incorrectly.



■ Transferbox:

This is where all signals are collected and then transmitted via fiber optic cable or network connection to the computer.

■ Computer system:

Pre-configured and equipped with Weinmann's system-tested visualization and analysis software; ensures enough computing capacity for configuration and operation on site.

■ Digicam:

The integrated video monitoring system can show the patient screen-in-screen next to his current analysis data. The tiltable camera with zoom function can be adapted to any room.

■ SOMNObutler:

For convenient and neat storage of the transfer box, headbox and bodybox and auxiliary materials during the day.

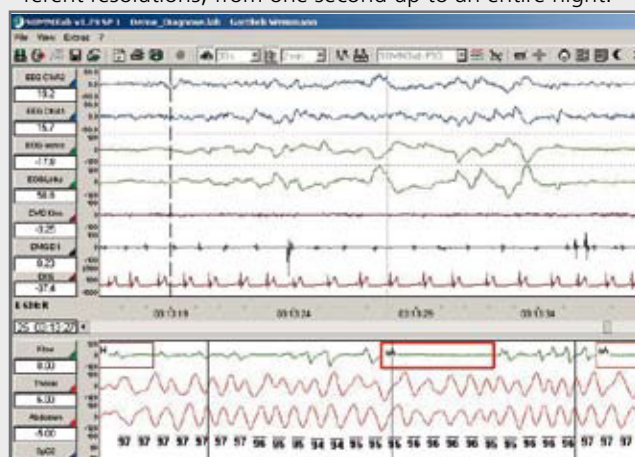
SOMNOlab-Software:**The user-friendly way to measurement results**

SOMNOlab-software is easy to set up according to individual needs and simple to use. A number of automatic analyses, like those performed by Weinmann's unique ARTISANA software, accelerate the work of examining the recorded signals. The Report Generator lets the user compile the measurement results quickly and simply into easy-to-read reports. Just a few mouse clicks show the logical and user-friendly way to the results. Recordings are made of the standard parameters for routine sleep examination as defined by the German Sleep Society (DGSM).

■ Visualization:

You decide what the configuration should look like with your choice of channel sequence, color, filter and scale, and then you save it all under "My visualization".

On the monitor you can look at two selected channel groups simultaneously and synchronized with the video image at different resolutions, from one second up to an entire night.



Excerpt: visualization in two scales of your choice

■ Online therapy settings of Weinmann devices:

Configure the patient device directly on the monitor with SOMNOadjust.

■ Analysis:

Whether you're doing cardio-respiratory analysis or sleep stage, PLMs, arousal or snoring analyses, the quality of the analysis and the simple representation of the results have been validated by clinical trials.

■ Video:

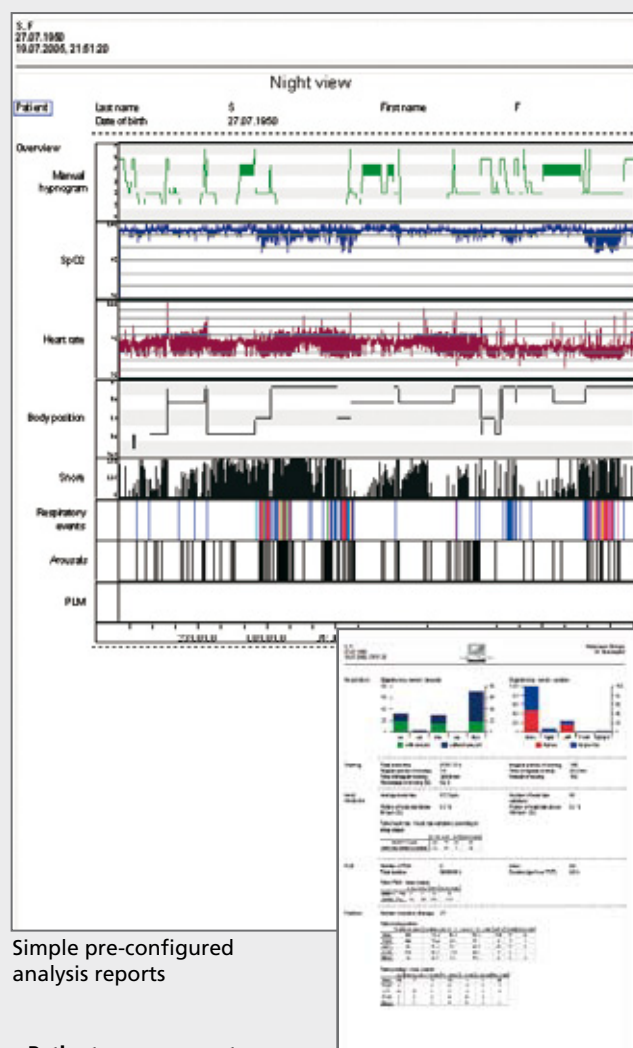
You can see the video image, synchronized with the recording. During the analysis, one frame per epoch will be displayed. You can start the video at any time with a mouse click. Sequences can be cut out easily and archived with recorded data.

■ SOMNOlab software supports the following devices:

- SOMNOlab (Head-, Body- and Transferbox)
- SOMNOcheck 2
- SOMNOcheck 2 R&K

■ Reports:

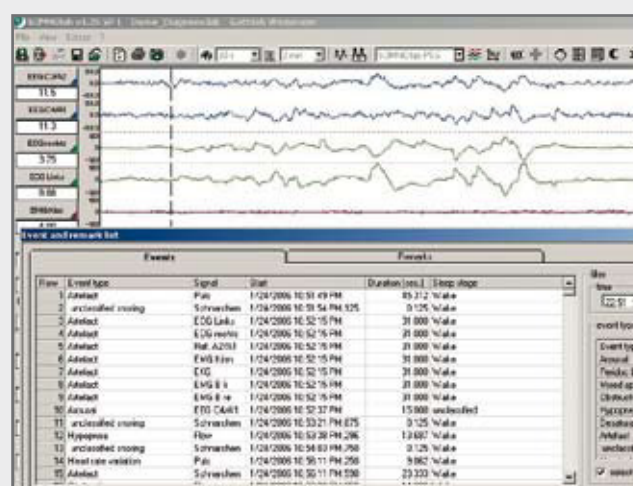
With the push of a button, you can generate brief or detailed reports in tabular or graphic form. Templates available as part of the supply schedule simplify work with the Report Generator.



Simple pre-configured analysis reports

■ Patient management:

It's easy to manage and archive measurement and patient data with use of the integrated SOMNOmanager lite software.



List of epochs with easy-to-use sort and filter functions

ARTISANA

Professional analysis at the press of a button - in your SOMNOlab system

When you analyze your recordings with the new sleep apnea software ARTISANA, you'll get very high-level results. The quality of the analysis has been validated by a multi-center study¹ which was conducted in six renowned sleep labs in Europe.

Multi-center study

The multi-center study guarantees that ARTISANA will analyze your recordings with quality comparable to that of the leading European sleep labs (in Barcelona, Berlin, Grenoble, Göteborg, Palermo, Turku).

ARTISANA stands for Artificial Intelligence in Sleep Analysis. The software, based on neuronal network technology, was implemented with the help of leading sleep medicine experts.

Because ARTISANA mimics human thought processes, it can be certain or uncertain about its decisions. By making its "self-evaluation" available, ARTISANA allows the user to concentrate on the phases of the recording in which the system was uncertain, perhaps because the signal contained artefacts.

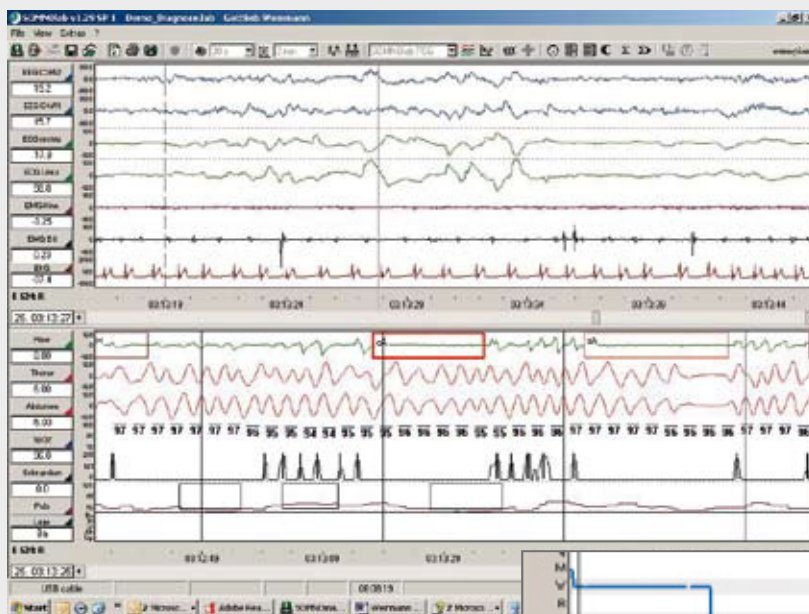
ARTISANA lets the user see and understand why it made a decision about a particular sleep stage. The user can follow the reasoning or correct the decision if he draws a different conclusion from the raw data.

The new sleep apnea software ARTISANA has been available as a component of the proven WEINMANN PSG system SOMNOlab since autumn 2006. ARTISANA analyzes data from SOMNOlab, SOMNOcheck 2 R&K and SOMNOcheck 2.

¹ Source:

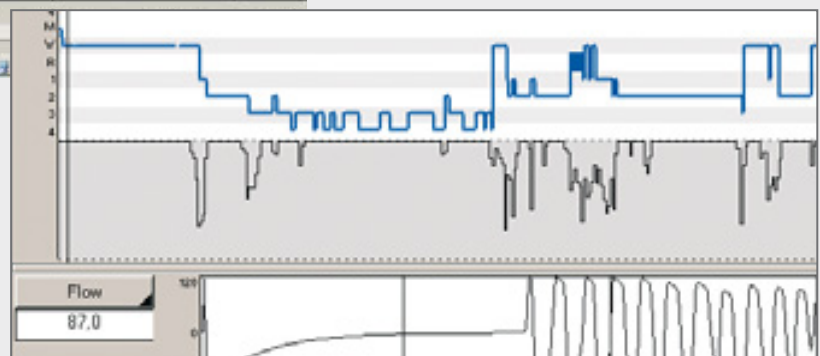
M. Schwaibold, Th. Ploch, W. Cassel, I. Th. Penzel, H.-F. Becker.

Multicenter Study on the Variability of the Sleep Stage Scoring Algorithm ARTISANA Compared to Human Experts – Part II: Validation Phase, Abstract ERS, 114s, P793, 2005



Applied rule:
available for each epoch via mouse click

Level of confidence:
a higher value corresponds to
a higher degree of certainty





SOMNOcheck 2

WEINMANN



SOMNOmanager

Weinmann's administrative software

Weinmann software products can be delivered with SOMNOmanager lite upon request.

SOMNOmanager lite offers a patient database which requires only one-time entry of patient data. Diagnostic recordings made with SOMNOcheck 2 and SOMNOlab, plus therapy monitoring data from SOMNOSupport are assigned to the patient after they have been read out of the diagnostic or therapy device. SOMNOmanager lite thus provides a complete overview of all examinations made of the patient. Reports generated by the diagnostic software will likewise be filed in the database, where they remain available at the click of a mouse. In addition, reports can be exported, i.e., filed in a different folder or sent by e-mail. ▶

SOMNOmanager-Lite V2.7

File Patient File Applications Views Configuration ?

Patients

Patient data

Archive

Patient data

Patient Listing

Bukowski, Martin, 4/30/1962; PID:
 Patient, New, 10/13/1962; PID:
 Schlapp, Stefan, 6/7/1996; PID:
 Schlapp, Stefanie, 6/7/1996; PID:
 Soft, Stefanie, 6/7/1996; PID:
 Weinmann, Gottlieb, 10/12/1923; PID:

Master data

PID: Dat

Last name:

First name:

Street:

ZIP Code: City:

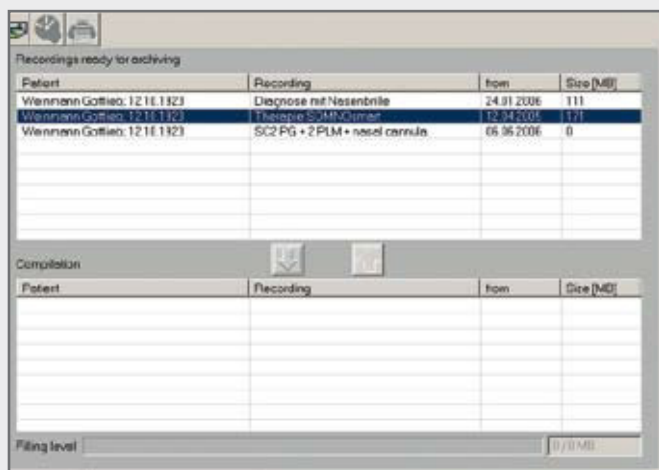
KIS

Documents

Date	Record
8/22/2006	SC2 PG + Nasenbrille

Refresh Listing

Patient data administration



Patient	Recording	from	Size (MB)
Wennmann-Gottlieb, 12111323	Diagnose mit Nasenbrille	24.01.2006	111
Wennmann-Gottlieb, 12111323	Therapie SOMNOmanager	12.04.2006	1171
Wennmann-Gottlieb, 12111323	SC2 PG + 2 PLM + nasal cannula	06.06.2006	0

Patient	Recording	from	Size (MB)

Filing level: 0 / 0 MB

SOMNOarchiv

Once the processing of the data captured by SOMNOlab has been completed, a click of the right-hand mouse key will flag each recording "released for archiving".

When SOMNOarchiv, the archiving tool installed with SOMNOmanager lite, is started, all the flagged files are listed and made available for archiving on a CD or DVD. SOMNOarchiv creates a directory for each CD/DVD and stores the name of the CD/DVD with each recording in the database so that the raw data can be retrieved if necessary. A table of contents can be printed immediately. If the recording is required at a later date, SOMNOmanager will request that the appropriate CD/DVD be placed in the drive.


OXYCOUNT mini with Multibase 2
OXYCOUNT mini

OXYCOUNT mini with Multibase

Pulse oximeter

OXYCOUNT mini measures oxygen saturation and pulse quickly and precisely, independent of external power supply.


CAPNOCOUNT mini

CAPNOCOUNT mini

Capnometer

CAPNOCOUNT mini measures the CO₂ content in the patient's exhaled breath.


smartOx

smartOx

Pulse rate and oxygen saturation available immediately

New measurement technology and an extremely convenient design team up to provide an efficient solution for spot checks and pre- and post-operative short-term monitoring.



Sleep Therapy

Fast recovery through positive pressure ventilation

In order to function effectively during the day, an organism has to regenerate by sleeping through the night. There are some diseases, like sleep-related respiratory disorders (sleep apnea), that prevent regeneration. Repeated respiratory arrests lasting at least 10 seconds each rob the affected person of restful and recuperative sleep. The many effects show up in daytime sleepiness, heart problems, high blood pressure and reduced efficiency. Many decades ago, Weinmann became the first German company to develop therapeutic solutions individually tailored to the needs of those patients.

Among the solutions is the nightly administration of positive pressure ventilation during sleep, a treatment that quickly improves the patient's condition. By means of a therapy device and mask, the patient receives continuous positive pressure throughout the night. By providing a "splint", CPAP (Continuous Positive Airway Pressure) makes sure that the patient's airways cannot collapse.

There are other forms of therapy in addition to classic CPAP therapy. AutoCPAP gently adapts to the patient's own breathing and automatically adjusts the pressure according to the patient's needs within the therapy range previously prescribed by the doctor.

BiLevel therapy, on the other hand, is suitable for patients who have high pressure requirements. It offers two different levels, increasing pressure during inhalation and decreasing pressure during exhalation. Patients appreciate the reduced pressure which allows them to exhale more easily and to improve their compliance as a result. CS therapy is suitable for treatment of heart failure patients with Cheyne-Stokes respiration or with central, mixed or complex sleep apnea syndrome. It works to normalize the patient's breathing and to eliminate obstructions at the same time, all of which effectively improves the patient's sleep.



Certified Quality
Management System
meeting EC directive 93/42/EEC,
Annex II (EN ISO 9001:2000/EN ISO 13485)





SOMNOcomfort 2e with SOMNOaqua

SOMNOcomfort 2e

CPAP therapy: Your sleep in top form

SOMNOcomfort 2e is the enhancement of the exceptionally successful SOMNOcomfort device which set the standard for CPAP therapy. SOMNOcomfort 2e is small, light, extraordinarily quiet and very simple to use, even more so with the new integrated heated humidifier.

An unbeatable duo in top form for greater compliance.

The heated humidifier SOMNOaqua is ideal in many ways for patients who suffer from dried out nasal mucosa.

SOMNOaqua can be inserted easily into the device housing and just as easily removed for cleaning.

Comfortable, user-friendly, dependable

- Very quiet, optimized to a pleasant mask sound
- Pressure constancy for high quality CPAP therapy
- New space-saving device design
- Optional integrated heated humidifier
- Power supply from 100 to 240 V for worldwide use
- Optional DC adapter for mobile use can be connected to 12 V or 24 V
- Patient-friendly three-key operation, including a raised on/off key
- Click adapter for standard hose
- Trouble-free cleaning
- Read-out of compliance data with PC software SOMNOSupport
- Remote settings with SOMNOadjust
- Supplied with trolley-suitable bag

CPAP20e

Basic therapy for sound sleep

Weinmann's best-priced CPAP20e guarantees effective CPAP therapy – and thus healthy sleep. User-friendliness and economy are the watchwords for the simple and efficient operating functions.



CPAP20e with humidifier CLICK 2

User-friendly

- Simple, proven three-button operation
- Trouble-free cleaning
- Quiet, < 30 db(A)
- Light, only 1.25 kg
- Pressure constancy
- Use of standard tube
- Analysis of compliance data with PC software SOMNOSupport
- Date-related compliance data with or without humidifier for 365 days
- Remote setting with SOMNOadjust or SOMNOSupport

Functions

- Softstart function (5 to 30 minutes)
- Two-level filter system
- Safe oxygen feed
- Automatic altitude adjustment
- External power pack can be used worldwide with 100–240 V
- DC adapter for 12 V/24 V available as accessory

Available option – Humidifier CLICK 2:

Attaches to therapy device with a simple "click", holds 280 ml of water, six-level setting on therapy device, easy to clean

SOMNOsoft+

CPAP therapy with softPAP

SOMNOsoft+ is the new sleep apnea therapy device with gentle and intelligent pressure relief in softPAP mode. The device reduces the maximum CPAP pressure in anticipation of the change to exhalation but, like CPAP, safely and effectively maintains the pressure during inhalation.

First class sleep

New and sensitive patients in particular sleep more comfortably, exhale more gently and enjoy a more restful night. Doctors have a broader therapy spectrum and patients improve their therapy compliance.

- Extremely quiet with high pressure constancy
- Comfortable with softstart and autostart
- Simple device operation
- Highly developed hygiene concept
- Two-level filter system with fine and coarse filters
- Adaptable heated humidifier SOMNOclick 300
- Graphic analysis with PC software SOMNOsupport and extensive diagnostic information for therapy monitoring: RDI, respiratory events, snoring, relative respiratory minute volumes, leakages, etc. plus compliance data (therapy calendar)



SOMNOsoft+ with softPAP pressure relief

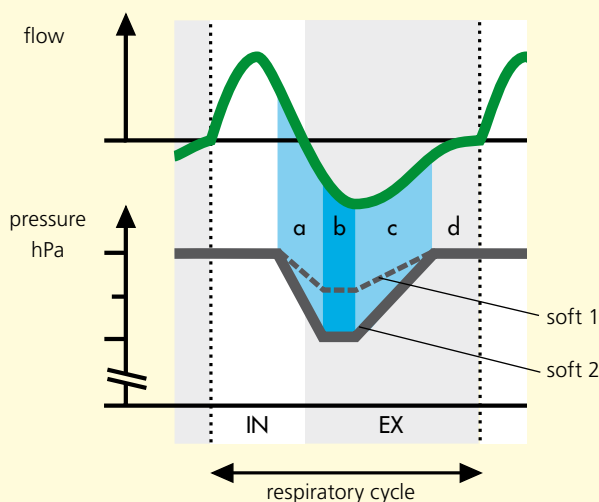
- Remote setting with SOMNOadjust or SOMNOsupport
- Analog signals for PSG input (flow, pressure, leakage)

softPAP

Anticipatory pressure relief – the sleep therapy device SOMNOsoft+ functions according to the softPAP principle. It is especially designed for sensitive patients who do not like the feeling of exhaling against high CPAP pressure. Depending on the patient's needs, two different pressure reduction levels can be set in softPAP mode for the transition from inspiration to expiration. Because the patient can exhale more easily, his sleep is more restful and his compliance with therapy is better.

The CPAP pressure is reduced only if no impending respiratory events such as apnea or flow limitations are detected. Thus it is guaranteed that the airways will always be kept open. The device also automatically adjusts to the patient's own respiratory pattern and prevents tachypnea (abnormally fast breathing). Because there is no flow-proportional change in the pressure reduction, the patient's breathing is supported in the event of central hypopnea.

softPAP Pressure Relief



- a Anticipatory reduction at end-inspiratory phase
- b Gentle, relieved exhalation from the start
- c Renewed increase in pressure adjusted to patient's respiratory rate
- d Airways kept open at critical points

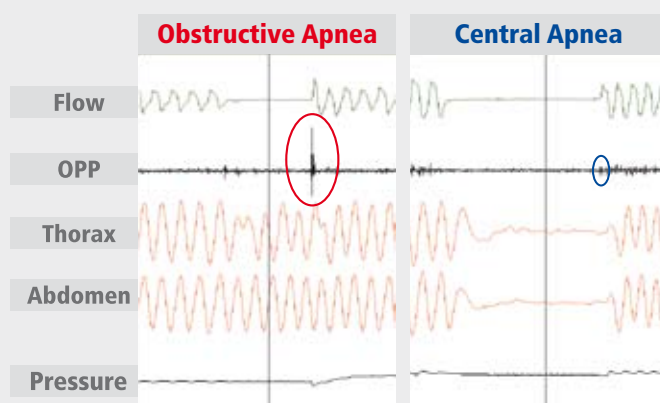
SOMNObalance e

Auto-CPAP therapy: sleep at last

The new auto-CPAP therapy device offers balanced treatment of obstructive sleep apnea. Dependable distinction is made between obstructive and central apnea by the new OPP (Obstructive Pressure Peak) technology. SOMNObalance e is small, light and extremely quiet. The therapy device makes operation very easy and cleaning procedures – of the integrated humidifier SOMNOaqua too – absolutely trouble-free.



SOMNObalance e is available with the integrated, heated humidifier SOMNOaqua (accessory).



OPP (Obstructive Pressure Peak) to distinguish central from obstructive apnea

Balanced therapy

- Quiet with stable pressure
- CPAP and APAP modes with pressure relief option softPAP
- OPP (Obstructive Pressure Peak) technology to distinguish central from obstructive apnea
- Epoch-based, need-oriented pressure adjustment

Informative

- Patient-oriented info menu in display makes therapy success visible with information about RDI (Respiratory Disturbance Index), leakage and 90th percentile
- Extensive statistical data for therapy monitoring (including CPAP) with analysis by PC software SOMNOsupport
 - 35 hours of high resolution titration data and signals
 - 180 days of compliance data with compressed signals
 - 365 days of annual compliance data
- Remote setting with SOMNOadjust or SOMNOsupport
- Analog signals for PSG feed (pressure, flow, leakage, OPP, relative respiratory minute volume)

Mobile

- Small and light
- Worldwide use with 100 to 240 V power connection
- Battery operation (cars: 12 V or trucks: 24V) with optional DC adapter, also with simultaneous operation of humidifier

Convenient and user-friendly

- Suitable for full-face masks
- Mask test to check mask airtightness after device is switched on
- Softstart and infinitely adjustable increased starting pressure
- Click adapter for standard hose
- 2-level filter system with fine and coarse dust filters
- Trolley-suitable bag included in supply schedule

The optionally integrated humidifier SOMNOaqua can be inserted simply into the device housing. Its high performance, convenient operation and very simple cleaning make it a valuable addition to the device.

Auto-CPAP

Some patients with obstructive sleep apnea have greatly varied pressure needs. They are treated with auto-CPAP devices that can always tell if a narrowing of the airways (obstruction) is taking place. If that's the case, the device reacts to prevent the airways from closing. Auto-CPAP devices by Weinmann are designed for needs-oriented pressure adjustments and developed with technologies such as OPP or OPS for reliable recognition of central and obstructive events. By combining information from several signals, the device offers outstanding accuracy in its assessment of apnea, hypopnea, flow limitations and snoring.

SOMNOsmart 2

Auto-CPAP therapy in combination with softPAP

Auto-CPAP therapy adapts to the patient and automatically adjusts the pressure to the needs of the sleeping patient according to respiratory events such as apnea and hypopnea, flow limitations and snoring.

In SOMNOsmart 2 accurate event recognition is based on the unique combination of the OPS signal, flow and snoring signals. The one-of-a-kind algorithm guarantees effective therapeutic pressure that reliably and gently cares for the patient throughout the night.

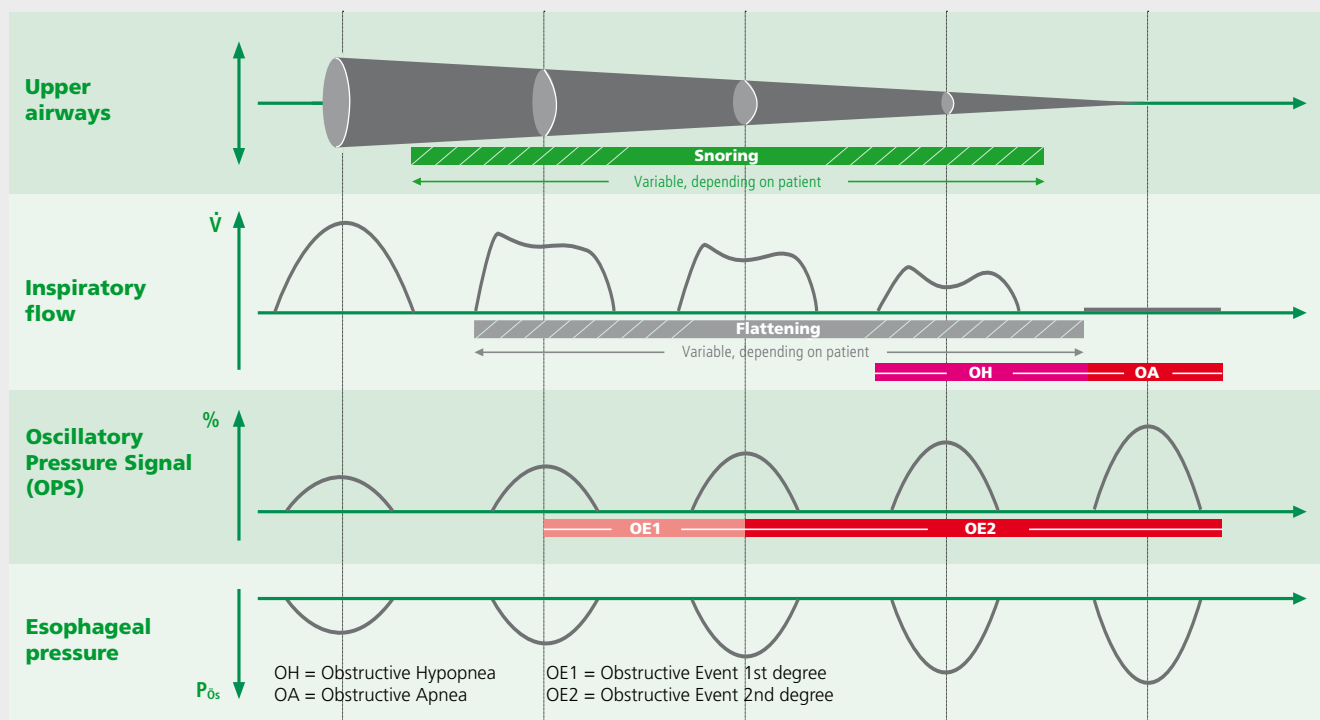
- Extremely quiet with high pressure constancy
- Comfortable with softstart and autostart
- Simple device operation
- Highly developed hygiene concept
- Two-level filter system with fine and coarse filters
- Adaptable humidifier SOMNOclick
- Graphic analysis with PC software SOMNOSupport and extensive diagnostic information for therapy monitoring: RDI, respiratory events, snoring, OPS, leakages, etc. plus compliance data (therapy calendar)
- Remote setting with SOMNOadjust or SOMNOSupport
- Analog signals for PSG input (flow, pressure, OPS, leakage)



SOMNOsmart 2 with JOYCE Full Face

- Suitable for use with full-face masks in full-face mode
- Intelligent softPAP pressure relief for gentle care and comfort, can be combined with auto-CPAP
- Starting pressure can be set at higher level, especially for patients with high-pressure needs or greater tidal volume

Signals and Events



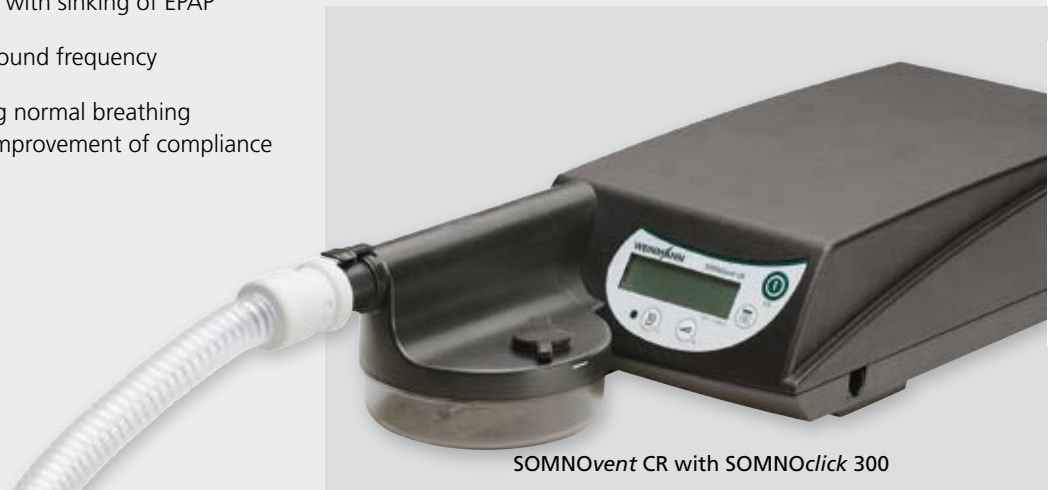
SOMNOvent CR

Sound sleep – clearly a matter of the heart

SOMNOvent CR ("Cardio-Respiratory") is Weinmann's therapy device for patients with Cheyne-Stokes respiration or central, mixed or complex sleep apnea syndrome. Anti-cyclical modulated ventilation (ACMV), also known as adaptive servo ventilation (ASV), normalizes the patient's breathing and eliminates related obstructions. Waking reactions are reduced, respiration is stabilized and sleep is effectively improved.

CR mode: combined therapy for Cheyne-Stokes respiration and sleep apnea

- Intelligent and powerful algorithm for automatic adjustment of three pressure levels (IPAP, EPAP and EEPAP) to the current needs of the patient with differentiation between obstructive and central events:
 - IPAP and EPAP regulation for adequate pressure reaction to periodic breathing or CS respiration
 - Auto-CPAP functionality for adjustment of EEPAP upon recognition of obstructive events (= autoEEPAP)
- Maximized ventilated breath with sinking of EPAP
- Automatic or pre-set background frequency
- softPAP pressure relief during normal breathing for maximum comfort and improvement of compliance
- Extremely quiet with high pressure constancy
- Comfortable with softstart and autostart
- Simple operation of device
- Well-designed hygiene concept
- 2-level filter system with fine and coarse filters
- SOMNOclick 300 humidifier can be adapted
- Maintenance only every two years or every 5000 hours
- Graphic analysis with PC software SOMNOsupport and extensive diagnostic information for therapy monitoring and compliance data (therapy calendar)
- Simple setting of parameters
- Remote setting with SOMNOadjust or SOMNOsupport
- Analog signals for PSG feed (flow, pressure, leakage)



SOMNOvent CR with SOMNOclick 300

i

Heart failure and sleep-related breathing disorders

At least 1.3 million people in Germany suffer from heart failure, according to the University of Würzburg and every year another 116,000 cases are added to that number. Worldwide the number of people affected is 22 million, reports the University of Zürich, some 1.5 million of whom die each year from complications associated with heart failure. „Given the increase in the portion of older people in our society, the number of heart failure patients will also rise significantly,” according to the German Society for Cardiology, Cardiac and Circulatory Research (DGK). The DGK reports that 2 to 5% of people more than 75 years of age are affected and up to 10% of those 80 years and older.

Triggers of heart failure include coronary heart disease, cardiac muscle ailments and complications from high blood pressure. The connection between heart failure and sleep-related breathing disorders has also gained the attention of researchers. The vital supply of oxygen to the body is interrupted by obstructive and central sleep apnea (Cheyne-Stokes respiration, see box on page B8). The resumption of breathing is frequently caused by a waking reaction (arousal) in the brain. In turn this triggers a long-lasting stimulation of the sympathetic nervous system. That means that the heart tries to beat faster and stronger, blood pressure rises while the blood vessels (except for the coronary arteries) simultaneously constrict, stress hormones are released and the body is put into a “fight or flight” mode. All of this activity is an enormous load for an already weakened heart. If they remain untreated, sleep apnea patients have a very grim prognosis and a clearly increased risk of suffering a cardiac infarction or stroke.

CR mode: three pressure levels

The needs of the patient

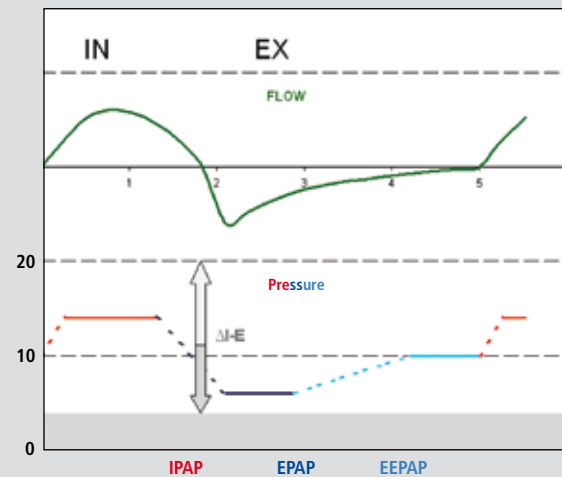
Depending on the recognized events, the three pressure levels IPAP (upper pressure level during inspiration), EPAP (lower pressure level at the start of expiration) and EEPAP (pressure level at end of expiration) are automatically adjusted to the current needs of the patient.

Effect and benefit for the patient

Ventilation is normalized, breathing is stabilized and obstructions are eliminated in cases of Cheyne-Stokes respiration and central, mixed or complex sleep apnea syndrome.

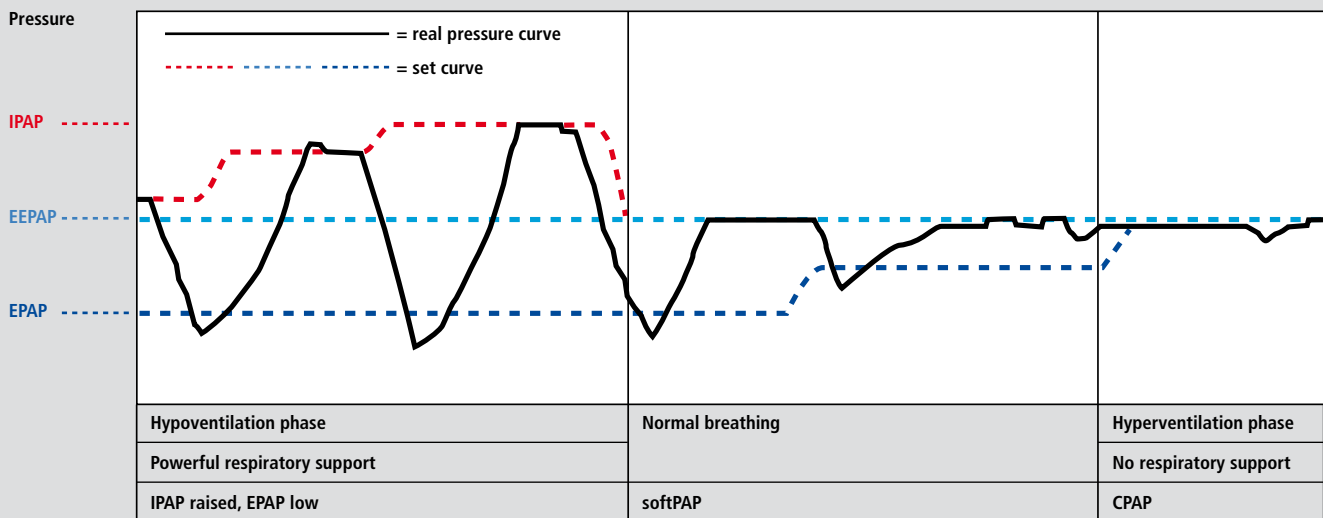
Fast relief

While the respiratory fluctuations are balanced out with anti-cyclical ventilation, the pathophysiological respiration is modulated in a physiological direction. That serves to suppress hyperventilation. Central and obstructive breathing patterns are recorded and efficiently regulated for greater therapeutic effect.



The very gentle regulation guarantees sound and restorative sleep. The intelligent algorithm continuously adjusts to the needs of the patient during the night and ensures optimum therapy.

Dynamic reaction to central events



CR mode: adjusted to needs

With normal breathing

When the patient breathes normally, pleasant pressure relief (softPAP) is applied. Prior to the transition to expiration, the therapy pressure is lowered in order to ease the patient's exhalation and increase his comfort. In plenty of time before the end of the expiration phase, the pressure is again raised to the EEPAP level.

Obstructions

When obstructions are detected (epochs with apnea, hypopnea, flow limitations or snoring) the EEPAP is increased to hold the airways open (= auto EEPAP).

Decreasing tidal volume

At decreasing tidal volume (hypoventilation phase), SOMNOvent CR supports the patient's breathing by continuously increasing the IPAP/EPAP difference.

Apneas

When apneas occur, SOMNOvent CR automatically responds with a patient-specific frequency (like ST mode).

Increasing tidal volume

When tidal volume increases (hyperventilation phase), the IPAP/EPAP difference is reduced to zero in order to quiet and calm the patient's breathing.

SOMNOvent S

BiLevel S therapy

BiLevel therapy allows the patient to exhale freely because the expiratory pressure is lower than and independent of the inspiratory pressure. Background frequency ensures added safety. The device automatically takes over the patient's triggering when central apnea occurs, as in cases of adipose hypoventilation syndrome.

Restful sleep at every pressure level

- Extremely quiet due to unique noise suppression
- High degree of pressure constancy
- Comfortable with softstart and autostart
- Adjustable trigger
- Background frequency for additional safety
- Simple device operation
- Highly developed hygiene concept
- Two-level filter system with fine and coarse filters
- Adaptable heated humidifier SOMNOclick



SOMNOvent S with humidifier

- Analysis of compliance data (therapy calendar) with PC software SOMNOSupport
- Remote setting with SOMNOadjust or SOMNOSupport

SOMNOvent ST

BiLevel ST therapy

In addition to treatment of sleep-related respiratory disorders, BiLevel ST therapy can be used by patients with general respiratory insufficiency such as chronic obstructive pulmonary diseases (COPD), respiratory mechanism (scoliosis), neuromuscular disorders and by patients with partial central respiratory control disorders.

Aids breathing, simply, safely and sensitively

SOMNOvent ST offers all biLevel modes (S, T, ST) and, thanks to its sensitive trigger, gently adjusts to the breathing pattern of each patient.

- Extremely quiet due to unique noise suppression
- High degree of pressure constancy
- Comfortable with softstart and autostart
- Adjustable trigger
- Background frequency for additional safety
- Simple device operation
- Highly developed hygiene concept



SOMNOvent ST with O₂ valve, SOMNOclick 300 and JOYCE

- Two-level filter system with fine and coarse filters
- Adaptable heated humidifier SOMNOclick
- Analysis of compliance data (therapy calendar) with PC software SOMNOSupport
- Remote setting with SOMNOadjust or SOMNOSupport
- * See also BiLevel ST 22, Page C6

Cheyne-Stokes respiration

Cheyne-Stokes respiration is characterized by periods of gradually increasing and decreasing tidal volumes interrupted by periods when breathing ceases entirely (apneas). It is observed primarily in patients with severely weakened cardiac muscle (congestive heart failure). Because the heart is weak, it is incapable of guaranteeing an adequate supply of blood and thus oxygen to the body. Cheyne-Stokes respiration generally occurs during sleep. Patients affected by this ailment suffer from shortness of breath after even slight physical effort. Their prognosis is not good.

Devices specially designed to treat Cheyne-Stokes respiration are available. They counteract the periodic increases and decreases in the patient's respiration and make sure that regular breathing is eventually restored. Patients benefit from this treatment, which allows cardiac edema to decrease over time, reduces the incidence of dyspnea and nearly eliminates the need for nighttime trips to the toilet.

Titration

The titration device SOMNOset gives doctors reliable and accurate assistance in determining the required CPAP therapy pressure. Based on the SOMNOsmart 2 technology, SOMNOset precisely processes all respiratory events. Flow and snore signals along with OPS are analyzed and stored as events, such as obstructive or central apnea.

SOMNOset

Automatically the best titration

The new automatic CPAP titration technique made possible by SOMNOset puts you a critical step ahead in terms of process improvement and titration quality.

SOMNOset is your reliable and precise assistant in determining the required CPAP therapy pressure.

Based on the unique CPAP technology of the proven Weinmann device SOMNOsmart 2, the new SOMNOset processes all respiratory events with great precision and reliability. Flow and snore signals and the Oscillatory Pressure Signal (OPS) are analyzed and stored as events (e.g., obstructive/central apnea, obstructive/central hypopnea, snoring, flattening). Leakage detection and artefact recognition ensure high quality analysis.

Flexible

- All necessary titration modes in one device: auto-titration, pressure profile, APAP (auto CPAP) and CPAP
- Remote setting with SOMNOadjust or SOMNOsupport

Objective

- Top level titration quality, at any time reproducible and understandable
- Analog signals for PSG input (flow, pressure, OPS, leakage)



SOMNOset with bacteria filter

Economical

- Cost and time savings as a result of optimized processes, leaving more time for patient instruction and mask adjustments
- Recommended titration pressure at the push of a button
- Split-Night: The recommended titration pressure can be activated after three hours
- Simple operation and familiar accessories as with Weinmann therapy devices SOMNOcomfort and SOMNOsmart 2.
- Hygienic treatment at change of patient not required; bacteria filter is part of the equipment.

Recommended use of SOMNOset modes

Mode	Method	Favored Form of Therapy	Titration / Therapy Setting	
			Process	Result
Autotitration	Pressure adjustment based on indexing (summation of events)	CPAP	<ul style="list-style-type: none"> ■ Automatic titration optional with Split-Night 	<ul style="list-style-type: none"> ■ Pressure recommendation: CPAP target pressure ■ APAP with variable pressure course
Pressure Profile	Fixed time-defined pressure levels	CPAP	<ul style="list-style-type: none"> ■ Automation of manual titration ■ CPAP therapy monitoring 	<ul style="list-style-type: none"> ■ CPAP target pressure ■ APAP for changing pressure needs
APAP	Pressure adjustment over single events, close to pressure needs	APAP	<ul style="list-style-type: none"> ■ APAP therapy 	<ul style="list-style-type: none"> ■ APAP required ■ CPAP for constant pressure needs
CPAP	Constant pressure	CPAP	<ul style="list-style-type: none"> ■ Manual titration ■ CPAP therapy monitoring 	<ul style="list-style-type: none"> ■ CPAP target pressure

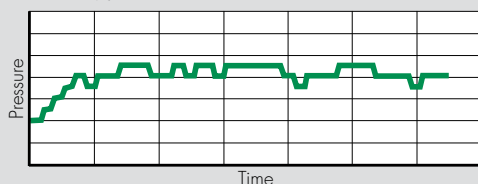
SOMNOset – Four modes, one goal

The best therapy decision

AUTO TITRATION Mode

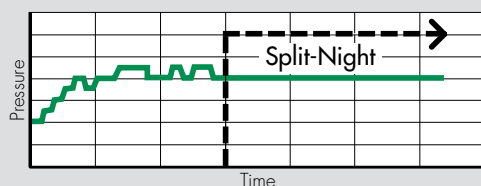
Pressure is adjusted on the basis of ongoing index formation according to an event's frequency and severity. At the end of a titration night, SOMNOset determines the recommended titration pressure.

The pressure curve shows the patient's suitability for CPAP or APAP therapy



The recommended titration pressure is read out with the help of SOMNOsupport or displayed on the device at the touch of a button (SET key).

When the option "Split-Night" is chosen, the patient is titrated during the first part of the night and then treated at the recommended titration pressure (CPAP therapy pressure) for the rest of the night.

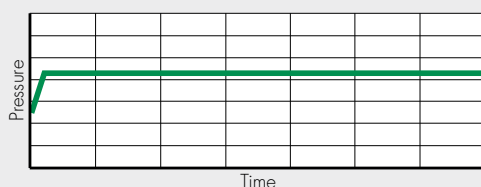


Use

The auto titration mode automatically determines the required CPAP therapy pressure for patients with constant pressure requirements or recommends continuous APAP therapy when an analysis shows that a patient needs variable pressures.

CPAP Mode

SOMNOset functions like a CPAP therapy device (e.g., Weinmann's SOMNOcomfort) and provides continuous pressure to the patient at the pre-set level.

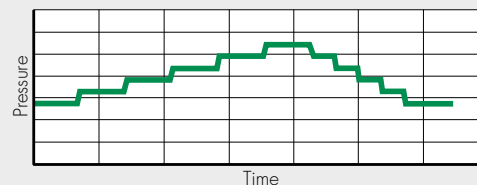


Use

The CPAP mode is used in CPAP therapy for patients who require constant pressure and for manual titration.

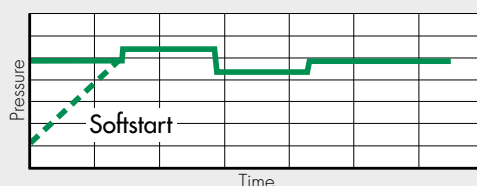
Mode PRESSURE PROFILE

Pressure adjustment does not depend on respiratory events but rather on a timed and pre-defined pressure profile.



The therapeutic effect of the CPAP level can be analyzed with polygraphy or polysomnography or by means of respiratory events stored in the device.

The doctor determines CPAP therapy pressure on the basis of available data.

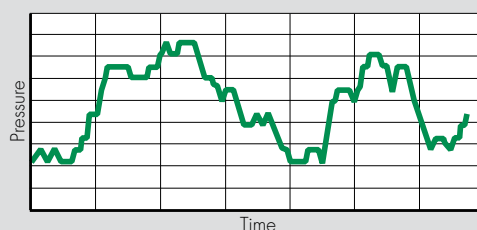


Use

The mode "Pressure Profile" is used for automated manual titration based on a time-related, pre-defined pressure profile. This mode is also suitable for automatic CPAP therapy checks. The therapeutic effect can be observed at changing pressure levels

APAP Mode (Auto CPAP)

SOMNOset reacts like Weinmann's auto CPAP therapy device SOMNOsmart 2 and immediately adjusts the pressure in response to each therapy-relevant event.



Use

The APAP mode provides continuous auto CPAP therapy for patients with variable pressure requirements (e.g., depending on body position or sleep stage or night-to-night variations).

SOMNOsupport

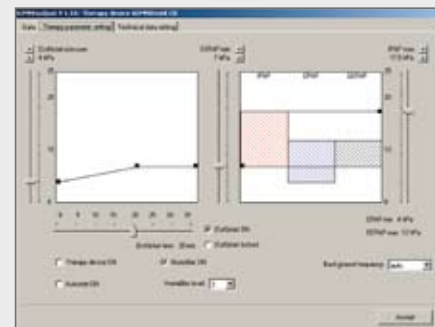
Setting and analysis software for Weinmann devices

SOMNOsupport is the supplemental PC software for all Weinmann therapy devices and is available to doctors, sleep labs and specialized dealers.

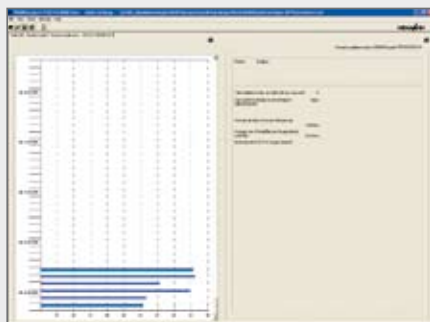
This software permits the reading and graphic representation of compliance data (therapy calendar) and the PC-managed remote-control setting of all therapy devices and the detailed analysis of therapy data per device.

SOMNOsupport also offers the following functions:

- Transmission of stored data to PC via converter box, from version 3.15 also with USB connection via converter cable
- Visualization of all therapy-relevant parameters
- Remote setting of therapy devices
- Graphic representation and analysis of therapy course and patient compliance
- Detailed diagram of signals and events during titration night
- Documentation and archiving of therapy success
- Print-out of therapy reports
- Decision support for the selection of therapy device and determination of CPAP pressure



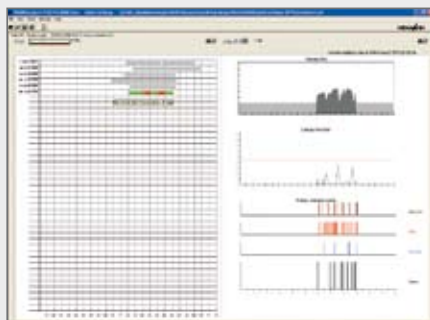
Remote setting of relevant therapy parameters with the SOMNOadjust module



Annual compliance



Analysis of therapy course and report on therapeutic efficiency



Weekly compliance and detailed pressure and event course for the selected day

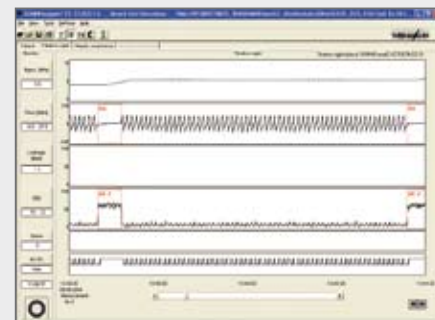


Diagram of titration night with signals and events

Starting December 2007: WEINMANNsupport – one package for everything

An integrated PC software package will be available for all SOMNO- and VENTI- therapy products: graphic visualization, monitoring and analysis of patient compliance, daily statistics, numeric and graphic representation, statistical analysis, 365 days of compliance data, remote setting of therapy parameters. More information is at www.weinmann.de.

SOMNOclick 300



SOMNOaqua



CLICK 2



Heated humidifier

Heated humidification for maximum compliance

Many sleep apnea patients suffer from dried out mucous membranes. The symptoms range from unpleasant dryness to inflammations and bothersome nosebleeds and seriously jeopardize patient compliance. Help can be found in the heated humidifiers SOMNOclick and SOMNOaqua.

The WEINMANN heated humidifiers are equipped with a large water tank which holds about 300 ml for patients with greater respiratory volume or pronounced mouth breathing. The heating or humidification settings and power supply are managed on the device itself. The humidifiers are easy to fill and to clean and may even be put into the dishwasher.

SOMNOclick 300

The heated humidifier is simply clicked into place – without hoses or electrical plug – on the front of the therapy device.

- Fits the therapy devices SOMNOcomfort, SOMNOsoft+, SOMNOsmart 2, SOMNOvent S/ST, SOMNOset and SOMNOvent CR

SOMNOaqua

Specially developed for integration into SOMNOcomfort 2 e and SOMNObalance e. The entire SOMNOaqua can be easily inserted into the device housing. It's also easy to use and easy to clean. Even when full, the humidifier itself is non-tilting up to 45°. A small window lets the user check the level of water in the tank.

CLICK 2

Attaches to therapy device CPAP20e with a simple "click", holds 280 ml of water, six-level setting on therapy device, easy to clean.



Bacteria filter disposable



Bacteria filter reusable

Bacteria filter

Bacteria filters keep the therapy devices hygienically pure for up to 24 hours. According to model, bacteria filters are either reusable if the interior particle filter is replaced, or disposable after a single use.

O₂-valve



O₂-Valve

Via the O₂-valve, oxygen can be supplied to the patient from a central gas system, a concentrator, a liquid oxygen bottle or a gas cylinder. In the event of a device failure, the oxygen valve immediately cuts off oxygen delivery for safety reasons. The oxygen valve can be used with all therapy devices except SOMNOTron.



Home Mechanical Ventilation

Our goal is clear: significant improvement in quality of life

Successful home mechanical ventilation sees to it that respiratory muscles recover and that the patient becomes more physically active. As a result of greater mobility, the patient improves quality of life and life expectancy.

Among the most frequently occurring illnesses which permanently overtax respiratory muscles are chronic obstructive lung and respiratory tract disorders, nerve and muscle disorders, scoliosis and chest (thoracic) wall disorders.

Home mechanical ventilation unloads the respiratory musculature with the help of ventilators and nasal or full face masks (non-invasive). After a phase of acclimation to the device and accessories, the patient can receive ventilation at home without a doctor's full-time supervision.

Weinmann develops customized technologies for home mechanical ventilation which automatically adjust to the current situation to give the patient maximum support and at the same time relieve doctors and nursing staff.



Certified Quality
Management System
meeting EC directive 93/42/EEC,
Annex II (EN ISO 9001:2000/EN ISO 13485)





VENTIlogic with JOYCE Full Face



Operations panel with display and convenient menu selection with navigation button

VENTIlogic

The first intelligent home mechanical ventilation device that automatically adjusts to the patient's breathing pattern

VENTIlogic is the first intelligent home mechanical ventilation device with adaptive, controlled ventilation that always adjusts to the patient's breathing pattern and thus increases patient compliance. VENTIlogic takes over breathing pattern analysis and ventilation setting within the range allowed by the physician. Consequently, patient-adaptive home mechanical ventilation represents significant time and expense savings for clinic personnel. For patients with chronically weak respiratory muscles, the device provides greater independence and better quality of life.

Synchronized respiration adjusted to breathing pattern

- Automatic adaptation of ventilation pattern to the patient's analyzed respiratory pattern
- Optimum synchronization provides obvious relief during titration in TA (Timed Adaptive) mode
- Time and money savings through automatic ventilation adjustment to changes in patient's breathing

Optimum therapy monitoring

- Effectiveness documented by TA statistics
- Clear graphic images of patient and device respiratory patterns
- Long-term monitoring made possible by VENTIsupport software

Broad therapy spectrum

- BiLevel modes: TA (new!), S, ST, T, SX, SXX, CPAP
- Volume compensation

Innovative operation

- Convenient setting options offline or online (with fan switched on or off)

TA Mode

Patented ventilation mode for controlled adaptive ventilation

The Weinmann-patented Timed-Adaptive (TA) mode provides the best help in unloading the patient's weakened respiratory muscles. A frequent problem in non-invasive ventilation (NIV) is the lack of synchronicity between patient and ventilator during controlled ventilation. This results in so-called "respirator-fighting" and additional breathing effort, which endangers patient therapy compliance. Compared to other standard therapies, the TA ventilation mode in Weinmann's NIV therapy device VENTIlogic offers greater patient comfort.

Home ventilation with VENTIlogic delivers significant advantages. Optimized synchronization of patient and device nearly eliminates the patient's respiratory efforts. In addition, simulation of the patient's spontaneous breathing pattern helps to increase therapy compliance while automatic titration of the parameters reduces the workload of clinic personnel.

SX and SXX Modes

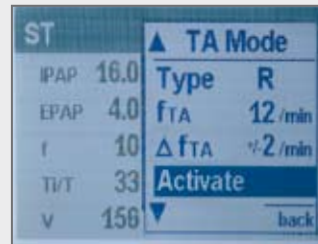
The SX and SXX modes in VENTIllogic and VENTImotion give doctors greater flexibility in their use of these therapeutic home care ventilation devices. The goal of the two modes is to gradually acclimate the patient to the ventilation settings. Most patients who use the devices need controlled ventilation but have trouble accepting the device's ventilation rhythm. The SX and SXX modes help to stabilize the patient's breathing pattern.

Convenient therapy

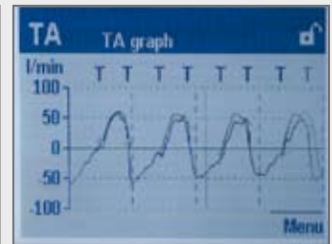
- Undisturbed, optimum ventilation by simulating patient's own respiratory pattern
- Whisper-quiet at only 25 dB(A)
- Softstart also available in T and ST modes
- Analysis can be manually started in physician mode as needed

Support for device service

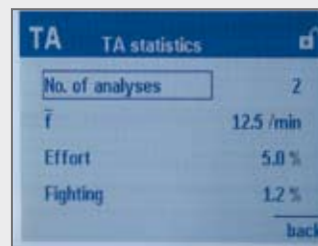
- No readjustment of parameter settings when patient breathing changes
- High patient compliance due to optimum ventilation comfort combined with minimum operating expenditure
- Compatibility with all VENTI and SOMNO accessories and all conventional third-party masks
- Complete service by Weinmann customer service



Parameter setting in TA mode



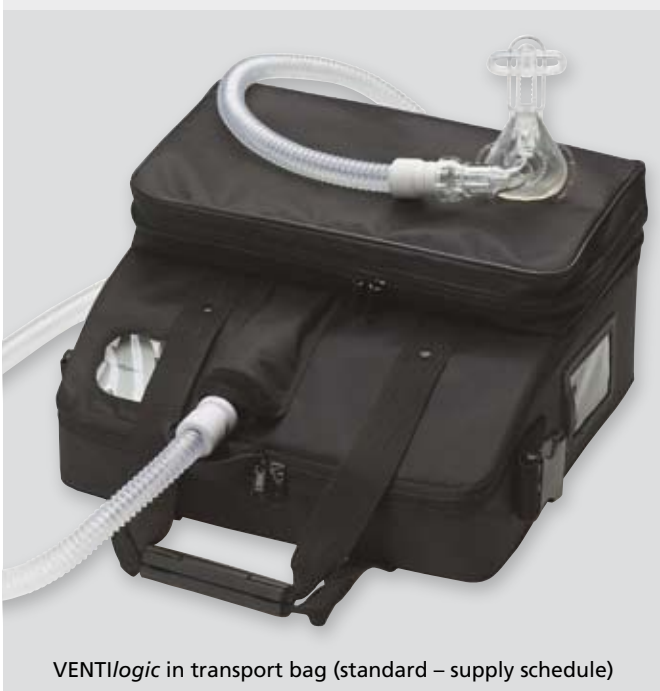
TA curve of analyzed patient flow and applied ventilation flow



Display of patient activity statistics in TA mode



Phase transition from analysis to ventilation



VENTIllogic in transport bag (standard – supply schedule)



VENTIllogic with heated humidifier VENTIclick and oxygen valve VENTI-O₂

VENTImotion

At home or on the road: optimum unloading of the respiratory pump

The optimized home ventilation device VENTImotion relieves the patient's respiratory pump to the extent required by the patient's physiological condition. The respiratory muscles can gradually relax and gain new strength. Patients on long-term ventilation can be released from the hospital earlier to enjoy freedom of movement in familiar surroundings at home.



VENTImotion with SOMNOmask and bacteria filter



Operating panel with display and menu selection with navigation button

Broad therapy spectrum

- Non-invasive S, ST, T modes and CPAP
- Expanded respiratory time window "X-tended respiratory freedom™" in new assisted SX and SXX modes
- Volume compensation with targeted tidal volume
- High trigger variability, separate for inspiration and expiration, adjustable for each patient plus expiration trigger in ST mode that can be deactivated
- Variable speeds for pressure rising and falling during inspiratory and expiratory phases, with graphic representation

Complete analysis

- Statistical analysis of ventilation parameters with actual and mean values and analysis of compliance data in display
- Detailed analysis by VENTIsupport ventilation software

Comfortable therapy

- Whisper-quiet volume at only 25 dB(A)
- Softstart also available in T and ST modes for easy first-time set-up for patients with initially high inspiration pressure
- Functional transport bag and rechargeable battery pack VENTIpowers for ventilation away from home

Innovative operation

- Can be switched on with the touch of a key
- Intuitive user guidance via a scroll menu, similar to a car's navigation system
- Direct access to the most important ventilation parameters
- Remote setting via VENTIsupport software

Accessory Systems

The right accessories can contribute greatly to successful therapy. That's why Weinmann offers accessories that add to the functions of the basic products. Home ventilation devices, for example, work with VENTiClick, an easy-to-adapt, high-performance heated humidifier that can hold up to 300 ml of water. It is specially designed for patients who require high levels of humidification and high flow. For patients who need additional oxygen, Weinmann offers the oxygen valve VENTI-O₂, which provides an increased inlet pressure for use in the hospital or at home.

With the help of the battery pack VENTIpowers, the entire ventilation system can operate for up to five hours in the event of a power loss or when used away from home. The ventilation software VENTIsupport is used for the clear visualization, continuous monitoring and exact analysis of patient compliance data.

Humidification

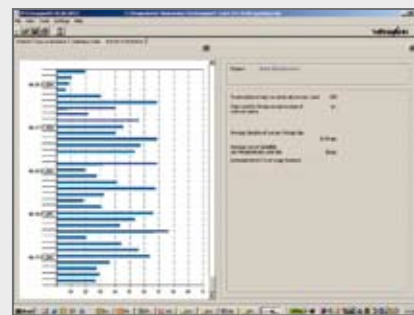
During treatment many NIV patients suffer from dried out mucous membranes, which can often lead to painful inflammation and nosebleeds. As a result, patients frequently refuse to accept the therapy and the use of their devices. Weinmann's heated humidifiers VENTiClick, SOMNOclick and SOMNOWave can help those patients. They are easily attached to the therapy devices and adjusted to the patient's desired level of humidification.

Maximum safety

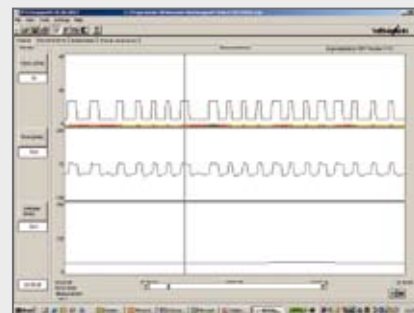
- Visual and acoustic alarms: $IPAP_{min}$, Vt_{min} , power loss, disconnection, overpressure, overheating, implausible pressure measurement
- Oxygen delivery via the click-on connecting valve VENTI- O_2 puts oxygen supply close to patient
- Back-up power independent of mains supply with VENTiPower, with minimum operating capacity of five hours
- Innovative filter concept with high filtration efficiency of 99.7% at particle size of 2 μm and a long service life of 1000 hours
- Weinmann hygiene concept for reconditioning at change of patient in accordance with recommendations for hygienic handling of home mechanical ventilation devices (issued by the industry group SPECTARIS^{med} according to the guidelines issued by the Robert Koch Institute for the hygienic care of home ventilation devices)

Clear presentation

- Numeric and graphic monitoring of ventilation parameters
- Flow and volume curves online in display
- Display of changes between spontaneous and mandatory respiratory phases



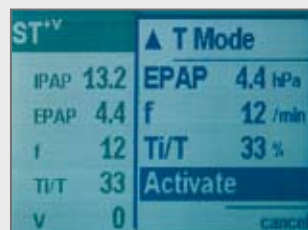
Statistical data
annual compliance



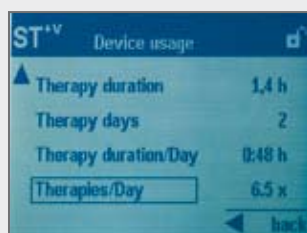
Daily compliance
analysis



Standard display
doctor's menu



Menu management with
windows



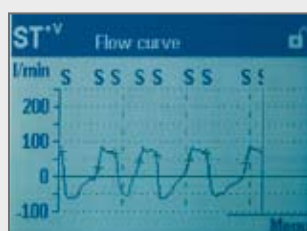
Patient compliance



Language selection menu



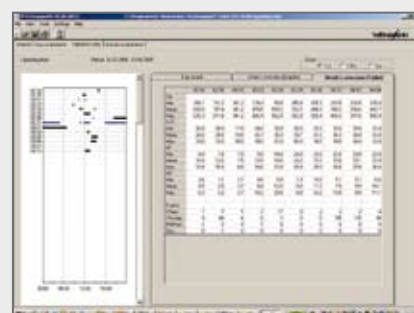
Statistical data
weekly compliance
over the course of a
day



Flow curve including changes
between spontaneous and
mandatory respiratory phases



Display of ventilation
parameter statistics



Statistical data
weekly compliance
table

BiLevel ST 22

The most comfortable BiLevel ST therapy between sleep lab and respiratory ward

BiLevel ST 22 efficiently, comfortably and economically combines ventilation therapy for sleep-related respiratory disorders and respiratory insufficiency. For cases of mixed apnea, Cheyne-Stokes respiration, adipose hypoventilation syndrome or mild COPD, a specially designed range of ventilation modes and parameters plus the connection to polysomnograph systems make titration with BiLevel ST 22 very easy.

The overview of ventilation statistics and patient compliance data in the large display along with the device's simple operation help to increase patient acceptance and to reduce the work of clinic personnel.



BiLevel ST 22



BiLevel ST 22 with JOYCE Full Face and VENTIClick

Comfortable therapy

- Therapy modes CPAP, S, ST and T
- Softstart function in all modes
- Separate settings for inspiration and expiration triggers
- Expiration trigger in ST mode can be turned off (corresponds to aPCV)

Optimum titration and therapy monitoring

- Display of ventilation statistics and patient compliance on the device itself
- Display of changes between spontaneous and mandatory respiratory phases
- Transfer of up to eight ventilation signals into conventional polysomnograph systems via the Weinmann Analogbox
- Remote control via SOMNOadjust or VENTIsupport software

Safety for all patients

- Alarms for disconnection, power loss and device error
- Filter system with high filtration efficiency (99.7%) and longer lifetime (1000 hrs.)
- Bacteria filter system for change of patient in titration use

Self-explanatory operation

- Multi-lingual scroll-through menus in the VENTi product line and selection knob for the most significant parameters
- Convenient setting options in offline or online operation (with fan switched on)
- Large display of all parameters and patient data



Offline operation in doctor's menu



Display of mean values in statistics menu

BiLevel

BiLevel ventilators provide a splinting of the patient's upper airways for treatment of obstructive sleep apnea. Furthermore, they care for the patient with the necessary tidal volume and offer back-up ventilation when spontaneous breathing is interrupted by central apnea. The difference between device versions: while the BiLevel S device is controlled by the patient (so-called "triggered ventilator"), the BiLevel ST device is machine-controlled. With a BiLevel S (S = spontaneous) device such as SOMNOvent S, breathing support is initiated and terminated by the patient's spontaneous breathing. Compared to CPAP ventilation, this type of support also features a comfortable pressure reduction during exhalation. A fixed low background frequency guarantees safe ventilation when apnea lasts longer than 10 seconds. BiLevel ST (ST = spontaneous-timed) devices, such as SOMNOvent ST and the new BiLevel ST 22, distinguish themselves further by an adjustable background ventilation that is activated when spontaneous breathing ceases. This combination of patient-controlled and machine-controlled operation provides sufficiently safe ventilation in cases of mixed apnea or Obesity Hypoventilation Syndrome and considerable unloading of the patient's respiratory musculature.



WEINMANN

TA

IPAP 8.0 hPa

EPAP 4.0 hPa

18 /min

48%

0 ml



AM



20 hPa

15 hPa

10 hPa

5 hPa

0 hPa

Menu

S



IPAP



EPAP

f

I:E

Enter

Analogbox D/A

The intelligent connection between Weinmann home mechanical ventilation devices and polysomnography

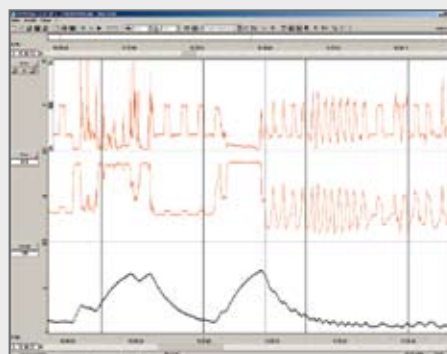
The Weinmann Analogbox D/A provides sleep diagnosis data and a visualization of ventilation parameters at a single glance. The Analogbox converts the digital signals produced by the therapy devices VENTIllogic, VENTImotion and BiLevel ST 22 into analog signals, which are proportional to the measured data. The Analogbox is connected to the therapy device's RS232 interface. Up to eight channels in the PSG can be displayed simultaneously. By eliminating the need to switch back and forth between the PSG view and the ventilation monitor, the Analogbox makes it easier for the doctor to operate the system and to make his diagnosis.



Analogbox D/A

Performance features

- All diagnosis channels including ventilation parameters at a glance
- Permanent channel configuration of the four signals, mask pressure, flow, leakage and tidal volume
- Four additional channels can be configured as desired
- Connection to all conventional PSG systems
- Compatible with Weinmann home ventilation devices VENTIllogic, VENTImotion and BiLevel ST 22



Display of ventilation parameters from BiLevel ST 22 in SOMNOlab with the help of the Analogbox D/A

VENTI-O₂

Venti-O₂

More oxygen

For patients who need additional oxygen, the O₂ valve VENTI-O₂ can be adapted to the device with just a "click". It has an increased inlet pressure of up to 7 bar for use in the hospital and at home.

VENTI-O₂

Basic requirements for medical devices are defined in standards. According to VDE (association of electro-technology, electronics and information technology) failure to fulfill the standards can suffice as proof of improperly executed work and may endanger the safety of the patient. The DIN EN ISO 10651 norm which covers lung ventilators for medical use says: if an oxidant is introduced into the flow of a ventilation system, the manufacturer or operator must ensure that no rebreathing of the oxygen into the device is possible, should the oxygen concentration exceed 24%.

The idea is to prevent the build-up of oxygen, which poses the danger of fire or explosion. If the ventilator functions properly, the EPAP pressure (therapy pressure for expiration) "washes" the oxygen out of the exhalation system. If the device breaks down, however, the source of the oxygen, which is not connected to the ventilator, continues to supply oxygen to the patient. This allows oxygen to enter the device at a relatively high concentration, which dramatically increases the risk of fire or explosion.

This risk does not exist with Weinmann's VENTI-O₂. In the event of a device breakdown, the oxygen valve makes sure that the supplemental oxygen is released into the ambient air. The functioning of VENTI-O₂ is simple: There are two small tubes in the spiral hose of the ventilator. While one of them delivers oxygen to the patient, the other measures the pressure. The valve responds accordingly.

Analogbox D/A

Weinmann ventilation devices display the measured data as digital signals. The polysomnographic systems in a sleep lab, in contrast, work with analog signals. Until recently it was impossible to display relevant parameters, such as pressure, flow, leakage and respiratory events, on the polysomnographic monitor. That meant that a doctor had to look at two screens at the same time in order to analyze the data and make his evaluation. Data analysis was made even more complicated by the time lag between the polysomnograph's data and the device-intrinsic curves.

The job of the Analogbox is to convert the digital information into analog signals. The box, which measures about 10 centimeters wide and 15 centimeters high, is equipped with four interfaces with double configuration. These interfaces connect the ventilator to the polysomnograph and permit the simultaneous display of parameter signals and ventilation curves on a single screen.

VENTIclick

More humidity

VENTIclick, the heated humidifier with 300 ml water capacity and increased humidifying performance, can be attached to the device with just a "click". Specially designed for patients who need increased humidity at higher flows.



VENTIpower

More safety. More mobility.

If the power fails or the patient leaves home, the complete ventilation system can be operated by a battery pack (except for BiLevel ST 22) for at least five hours. The patient simply places the device in the convenient transport bag and continues ventilation while away from home.



JOYCE

Nasal mask



JOYCE Full Face

Full face mask



SOMNOplus

All in one:
Mask, exhalation
system, headgear



SOMNOmask

Nasal mask



Exhalation systems

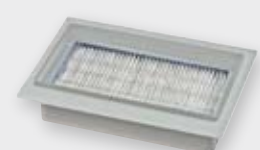
Silentflow 2 and noise suppressor



Bacteria filter



Filter cassette



Details about mask systems in chapter E

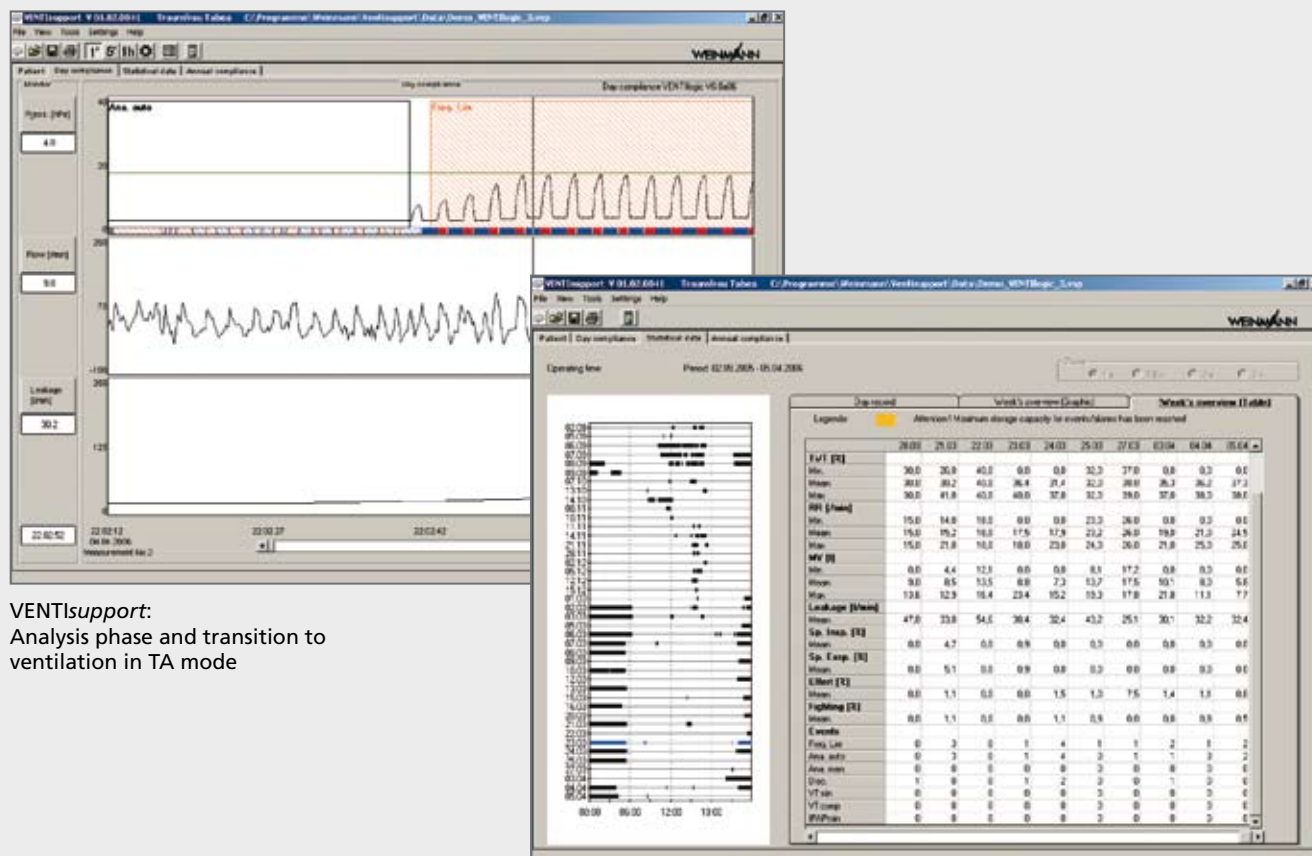
VENTIsupport

Better overview

VENTIsupport is the supplemental PC software for home ventilation devices by Weinmann. The software reads out, visualizes and analyzes therapy monitoring data.

With the help of daily statistics, the patient's ventilation data can be analyzed breath-for-breath for a 10-hour period. Furthermore, the statistical analysis also permits numeric and graphic representation of all ventilation parameters in Weinmann's home ventilation devices for up to six weeks. Annual compliance shows the patient's use of the device for 365 days.

With its remote setting module VENTladjust, VENTIsupport lets the user display and set therapy parameters. With the ventilation software VENTIsupport, patient compliance can be visualized graphically, checked continuously and analyzed accurately.



Starting December 2007: WEINMANNsupport – one package for everything

An integrated PC software package will be available for all SOMNO- and VENTI- therapy products: graphic visualization, monitoring and analysis of patient compliance, daily statistics, numeric and graphic representation, statistical analysis, 365 days of compliance data, remote setting of therapy parameters. More information is at www.weinmann.de.



Oxygen Medicine

Long-term oxygen therapy to regain quality of life

A severe and lasting oxygen deficiency in arterial blood is called hypoxemia. Patients with this condition can experience respiratory distress and exhaustion after even the slightest physical exertion. Pressure builds up in the pulmonary arteries in such a way that the walls of the blood vessels thicken. That in turn blocks gas exchange and makes oxygen deficiency in the blood more severe. Increased intrapulmonary pressure also leads to an overburdening of the right heart musculature, which can result in heart failure.

Hypoxemia can be triggered by pulmonary embolisms, pulmonary fibrosis, emphysema, thorax deformation or cardiac insufficiency.

Through long-term oxygen therapy, the quality of life for persons so affected can be improved. Treatment gives many of them enough breath so that they can once again move around almost normally. Their increased movement counteracts muscle loss due to the immobility caused by hypoxemia. For effective therapy, the patient must receive oxygen at least 16 hours per day, generally by means of a nasal cannula.

Various oxygen systems are available. Oxygen concentrators are intended mostly for use by patients at home. They filter oxygen from the ambient air and supply it to the patient via a hose system. Mobile patients can use a lightweight oxygen conserving system that can be carried in a backpack or a shoulder bag.



Certified Quality
Management System
meeting EC directive 93/42/EEC,
Annex II (EN ISO 9001:2000/EN ISO 13485)



OXYMAT 3

The best therapy partner at home

The oxygen concentrator OXYMAT 3 features service-friendly modular construction, whisper-soft operating sound and several equipment options. OXYMAT 3 is available with a



portable oxygen dosage monitor or a flow meter on the oxygen outlet. Both device models are offered for use in pediatrics with a flow meter for children that allows precise settings from 0.2 to 3 liters per minute.

The low-maintenance OXYMAT 3 weighs only 19.5 kilograms and comes with four rollers with brake and a carrying handle. The filter can be changed without opening the device.

Weinmann gives a five-year warranty on all functional parts of OXYMAT 3 devices with a serial number higher than 43.000.

Performance features:

- Oxygen flow of 1 to 5 liters per minute or 0.2 to 3 liters per minute as dosage monitor or flow meter model
- Best therapy quality with high oxygen concentration (95 +1/-3 Vol.% O₂ at 1 to 4 liters/minute)
- Whisper-soft at only 40 dB(A)
- High level of patient safety ensured by the device's self-test when it is switched on, a visual and acoustic alarm system in accordance with DIN EN ISO 8359 and a bubble humidifier that can be sterilized
- Economically beneficial – low power consumption, low number of parts and a five-year warranty
- Service is made easy by modular design with quick plug-in connections, simple filter change and adjustable rollers

Export only



easyOX

For efficient oxygen therapy

True to its name, the easyOX for stationary long-term oxygen therapy is easy and convenient to use and offers all the essential functions of an oxygen concentrator. The efficiency of the oxygen therapy is continuously monitored by means of an integrated ultrasound oxygen sensor. Available in two models: as a single flow meter for one patient at home or as a double flow meter for two patients in a hospital.

Performance features:

- Oxygen flow can be set from 1 to 5 liters/minute (flow meter integrated in housing)
- Available in two models:
 - ▣ as single flow meter model for home care
 - ▣ as double flow meter model for hospital use
- Therapy efficiency of 93 +/- 3 vol% with an oxygen concentrator
- Quiet, about 45 dB(A)
- Continuous oxygen concentration monitoring by an integrated oxygen sensor
- Reaches maximum oxygen concentration in less than three minutes
- Highest safety level for patient provided by visual and acoustic alarm functions (O₂ concentration, positive and negative pressure)
- Three-year warranty on all functional parts
- Also suitable for operation at 60Hz
- Reset button for protection from voltage peaks
- Adjustable rollers and practical service flap for fine filter change

OXYTRON 3

Versatile oxygen conserving system for greater mobility

On the road with the electronic oxygen conserving device OXYTRON 3, the patient is supplied with an oxygen dosage based on his/her need with every breath. Because the OXYTRON 3 has a longer cylinder range of up to five times the average, an oxygen patient can once again go for a walk, visit friends or go shopping – and reduce his oxygen expense at the same time. OXYTRON 3 can be used with pressurized gas cylinders or liquid oxygen systems.

Performance features:

- Low-maintenance electronic oxygen conserving system with separate pressure reducer
- Also suitable for liquid oxygen systems
- Significant oxygen savings at 5:1 as compared to continuous flow systems, but with the same therapeutic effect
- Precise dosage of oxygen at seven levels from 10 to 70 ml per breath
- High level of patient safety ensured by a very sensitive trigger, uninterrupted battery status display and visual and acoustic alarm functions
- Easy-to-use push-button operation, easy-to-read display and easy-to-handle low-weight device
- Power sources: practical rechargeable battery pack with brief charging time (less than two hours; device can be operated while it is being charged) or disposable batteries
- Available with different cylinder sizes (2.0-liter, 0.8-liter, 2.0-liter lightweight aluminum cylinder) and transport systems (3-in-1 transport bag, caddy)



OXYTRON 3
basic device



OXYTRON 3 complete system

CYPRESS

Pneumatic oxygen conserving system and pressure reducer

CYPRESS is an oxygen conserving system designed according to the two-in-one principle. The pneumatically operated oxygen conserver is combined with an oxygen pressure reducer. Like conventional pressure reducers, CYPRESS is simply screwed onto the oxygen cylinder and the dosage is set on the handy rotary dial. That's it.

Performance features:

- Maintenance-free pneumatic oxygen conserver with integrated pressure reducer
- Can be used with all oxygen cylinders up to a maximum of 200 bar
- Significant oxygen savings – 3:1 in comparison with continuous flow systems – with same therapeutic effect
- Precise oxygen dosages in six levels from 16 to 96 ml per breath
- Simple operation: rotary dial for dosages, continuous flow and off modes and integrated pressure reducer
- Greater patient comfort made possible by small and compact design and low weight (about 560 grams including pressure reducer)



CYPRESS basic device

- No expenses for disposable or rechargeable batteries
- Available with different cylinder sizes (2.0-liter, 0.8-liter, 2.0-liter lightweight aluminum cylinder) and transport systems (3-in-1 transport bag, caddy)



OXYFLOW Basic

OXYFLOW Revi with OMNIVAC, COMBIBAG and oxygen administrator

OXYFLOW

Versatile oxygen standing systems

OXYFLOW Basic and OXYFLOW Revi offer a broad therapy and utilization spectrum, ranging from oxygen inhalation to secretion suction and ventilation. Both are available with different oxygen operating panels.

OXYFLOW Basic

Infinitely variable oxygen inhalation with humidification requires the following equipment: a 10-liter oxygen cylinder with cylinder jacket and PONY safe-transport trolley, an OXYWAY Fine I pressure reducer and a humidifier.

OXYFLOW Revi

In addition to the equipment delivered with OXYFLOW Basic, this device also comes with a set of inhalation masks and a breath-ing bag to increase oxygen concentration, the proven OMNIVAC secretion suction device and the COMBIBAG resuscitator.



OXYBAG Hit with 2-liter oxygen cylinder

OXYBAG

Dependable emergency reserve

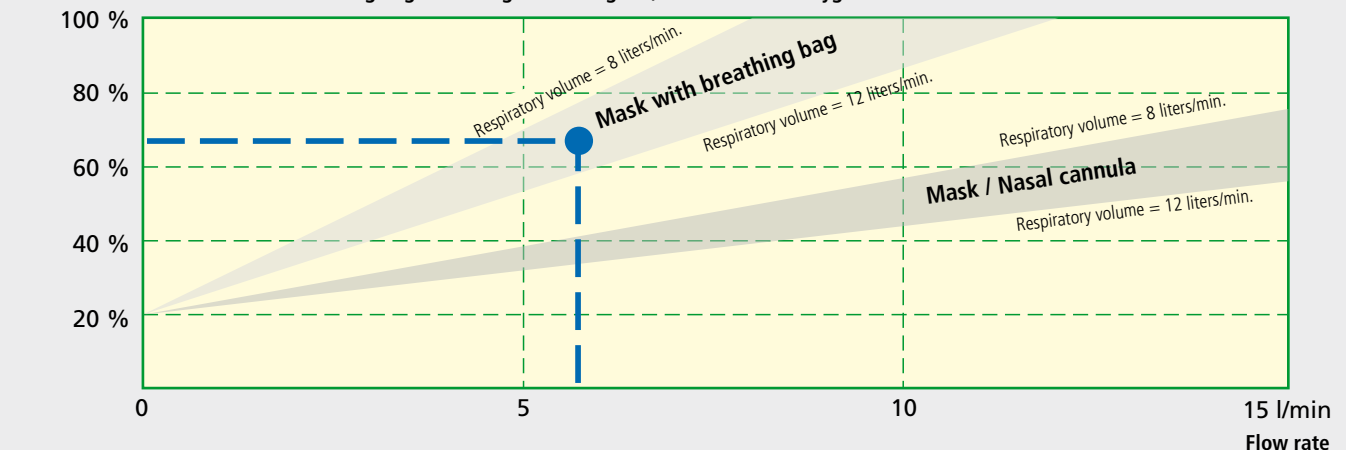
The portable OXYBAG oxygen treatment devices are the ideal oxygen reserves for patients at home or on the road. They can also be used for emergencies in nursing homes and doctors' practices.

OXYBAG Hit

The equipment includes the OXYWAY Fine I pressure reducer with content and flow gauge for infinitely variable dosages from 3 to 15 liters/minute, a 2-liter oxygen cylinder, an inhalation mask and the Weinmann 3-in-1 transport bag. Other pressure reducers and pediatric application systems are also available.

In comparison: O₂ concentration in the airways

Example: The set flow rate is 6 liters/minute, respiratory minute volume is 10 liters/minute, use of inhalation mask with breathing bag. According to the diagram, the result is an oxygen concentration of about 65%.



OXYWAY

Especially safe. Especially precise. Especially flexible.

Weinmann's OXYWAY pressure reducers stand out with their high degree of safety and precision and their variety of models. Intended for use in oxygen and emergency medicine, the versatile pressure reducers are small, light, precise and easy to operate.

Performance features:

- Greatest operating safety ensured by ultrasound-tested high-pressure housing, double sinter filter and explosion-protected gauge
- Highest precision in flow dosage over the entire cylinder pressure range
- Simple operation: flow levels are easily set and checked and cylinders are connected manually
- All relevant safety standards are fulfilled
- High variability on device outlet (e.g., straight or angled connection nozzle, disposable or reusable humidifier, suction injector, oxygen administrator, country-specific standard couplings)
- Mobile Weinmann service available as additional option
- Maintenance every four years

OXYWAY pressure reducers come in four basic models: OXYWAY Fast, OXYWAY Fix, OXYWAY Fine and OXYWAY Click.



1 OXYWAY Fast

for gradually adjustable doses of oxygen flow in levels 1, 2, 3, 4, 5, 6, 9, 12, 15 liters/minute or 0.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6 liters/minute

2 OXYWAY Fix

for permanently set oxygen flow of 4 liters/minute or 120 liters/minute for MEDUMAT

3 OXYWAY Fine

for infinitely adjustable oxygen flow of 0.5-3, 1.5-8, 3-15 liters/minute with content and flow meter

4 OXYWAY Click

for flow dosage via central gas systems used by rescue services and hospitals

Each basic device has additional models for special uses. Country-specific connectors are also available upon request.

ACCUVAC Basic

Safe suction – at home and away from home

ACCUVAC Basic can be adjusted for any suction situation in home care usage, including pediatrics, thanks to its infinitely variable subpressure regulation. The feature-laden suction pump is tough and tilt-resistant. Accessories make the ACCUVAC Basic especially versatile – mobile via its integrated battery pack, in a vehicle via the 12-volt cable and at home via a separate mains power supply unit.

Performance features:

- High patient safety level with subpressure regulation from -0.05 to -0.8 bar via a rotary dial and additional subpressure regulation via suction hose with fingertip control
- Suitable for use in pediatrics
- Flow capacity > 20 liters/minute at -0.8 bar subpressure
- Available with disposable collection canister (integrated overflow valve) or with autoclavable reusable collection canister (additional integrated bacteria filter)
- Made user-friendly by practical features such as a front-mounted integrated hose holder, battery pack voltage indicator and side-mountable accessories bag



ACCUVAC Basic with accessories bag and reusable collection canister

- Flexibly applicable, thanks to integrated battery pack, wall bracket with integrated battery charger (optional), 12-V connection cable for use in motor vehicle (optional), mains/charger unit with wide-area input for charging and operating in mains network (optional)
- Low noise level
- Ergonomic design for simple care and cleaning

3-in-1 Transport Bag

For all mobile oxygen therapy systems by Weinmann

The 3-in-1 Transport Bag is suitable for all OXYTRON 3, CYPRESS and OXYBAG Hit sales variants available from Weinmann. Equipped with individually adjustable belts, the bag can be used as a backpack, shoulder bag or in combination with the Weinmann caddy. That means more flexibility for the patient and for the dealer, who has to keep only one bag model in stock.

Features :

- Flexible use (as backpack, shoulder bag or on the caddy)
 - For all mobile systems by Weinmann (OXYTRON 3, CYPRESS, OXYBAG Hit)
 - For use as a shoulder bag, the bag's backpack belt can be stored easily
 - For use as a backpack, the shoulder bag belt can be removed with just a click
 - Reinforced rear wall and bottom for higher patient safety
- Simple cleaning process
 - Convenient extra inner bag with zipper for all accessories
 - Small loop for storage
 - Knobbed rubber base on bottom of bag for upright stability



OXYMAT 3 + easyOX Accessories

OXYcontrol 2

Oxygen concentration always under control

The small and convenient device monitors oxygen concentration in Weinmann's oxygen concentrators OXYMAT 3 and easyOX.

Performance features:

- Only two operating keys (calibration key and on/off key) for simple use
- Very brief sensor response time for fast calibration and measurement
- High level of accuracy with +/- 1% of measured value
- Device and accessories in protective transport case



OXYcontrol 2

OXYMAT 3 Accessories

- Separate flow meter for adults (not shown)
- Separate flow meter for children (not shown)
- 1 Dosage monitor for adults
- Dosage monitor for children (not shown)
- Adapter for sterile water packs (not shown)

Application systems, see below

Connection hoses – refer to current Weinmann price list



Oxygen dosage monitor with bubble humidifier and flow meter

Accessories

OXYBAG Hit, OXYTRON 3 + CYPRESS

- 1 2.0-liter cylinder
- 2 0.8-liter cylinder
- 3 2.0-liter lightweight aluminum cylinder
- 4 3-in-1 Transport Bag
- 5 Caddy

Application systems, see next page

Accessories for OXYBAG Hit:

- Pressure reducers OXYWAY Fine I, Fine II, Fine III, Fast I, Fast II, refer to page D5 (not shown)

OXYTRON 3 Accessories

- OXYTRON 3 battery pack (not shown)
- OXYTRON 3 charger (not shown)
- 6 OXYTRON 3 spiral hose
- 7 OXYTRON pressure reducer
- OXYTRON 3 continuous flow adapter (not shown)

Application systems, see next page





OXYFLOW Basic and OXYFLOW Revi Accessories

- Pressure reducers OXYWAY Fine I, Fine II, Fine III, Fast I, Fast III
- PONY safe-transport trolley with five casters
- Cylinder jacket, light gray
- 10-liter cylinder

OXYFLOW Revi Accessories

- 1 COMBIBAG resuscitator with oxygen reservoir and inhalation mask for adults
- 2 Oxygen administrator with three outlets
- 3 OMNIVAC suction equipment with 500-ml and 1000-ml collection canisters and injector
- Holder for two collection canisters
- Respiration hose
- Connection nozzle with swivel nut
- Bubble humidifier



ACCUVAC Basic Accessories

- 1 Accessories bag
- 2 Wall bracket
- Charger (for charging only)
- Mains/charger unit (operating and charging)
- 12V connection cable
- Lead battery pack
- Conversion kit for disposable collection canister
- Conversion kit for reusable collection canister



Application System Accessories for Oxygen Therapy

- 1 Set of nasal cannula for babies with 2.1-meter connection hose (20 pcs. / 40 pcs.)
- 2 Set of nasal cannula for children with 2.1-meter connection hose (20 pcs. / 40 pcs.)
- 3 Set of nasal cannula for adults with 2.1-meter connection hose (20 pcs. / 40 pcs. / 100 pcs.)
- Set of nasal cannula for adults with earpiece and 1.5-meter connection hose (20 pcs. / 40 pcs. / 100 pcs.)
- Set of nasal cannula for OXYTRON 3 (20 pcs. / 40 pcs. / 100 pcs.)
- Inhalation masks for children without breathing bag
- 4 Suction catheter Ch. 10 with foam rubber pads and connection hose
- Set of inhalation masks for adults without breathing bag (6 pcs. / 12 pcs.)
- Set of suction catheters Ch. 10 with foam rubber pads (10 pcs. / 20 pcs.)
- 5 Set of inhalation masks for adults with breathing bag (6 pcs. / 12 pcs.)

For other incidentals, refer to current Weinmann price list



Patient Interface

Central element in successful therapy

Masks are the most problematic part of therapy. After all, they touch and cover a large part of the patient's face, one of the most sensitive areas of the body, for several hours during the day or night. If the mask doesn't fit well, it may cause pressure points on the face or it may leak. Those problems could prompt the patient to reject the mask and thus jeopardize the success of his therapy.

Despite these concerns, masks were until recently just a side issue in the area of ventilation. Increasingly, however, they have been moving toward the center of attention as many patients have evidently realized that the success of therapy depends in large part on the mask.

The mask is the interface between man and machine and the way to get the air from the therapy device via a hose into the patient's airways. The requirements for ventilation masks – most of which are nasal or full-face masks – are enormously high. For one thing, they should be comfortable and skin-friendly. At the same time they should sit snugly on all different face types so that they can't slip out of place during the night and cause leaks. But they shouldn't be too tight or else they'll leave painful pressure points behind. Beyond that, the masks have to be able to withstand high therapy pressures and provide a way for patients to exhale without too much effort. They also have to be quiet and easy to use.



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Management System
meeting EC directive 93/42/EEC,
Annex II (EN ISO 9001:2000/EN ISO 13485)



Now
also in XL



JOYCE Full Face

**JOYCE Full Face, JOYCE Full Face 40 hPa,
JOYCE Full Face NV 40 hPa**

Weinmann's full face mask

Anatomical fit, convenient handling and a clever concept are all combined in JOYCE Full Face, the mask for sleep apnea and home mechanical ventilation patients.

Compared to other full face masks, the small and light JOYCE Full Face guarantees greater wearing comfort.

Its modular design principle is also suitable for our nasal mask JOYCE. That helps to optimize inventory management.

Fitting the mask to the patient is especially easy and practical with JOYCE Full Face. Simply remove the elbow piece and look into the mask to check the fit.

Perfect fit

- Proven ball-and-socket joint
- Anatomical fit for greater wearing comfort
- Easy to fit to patient
- Very quiet
- Lightweight
- Convenient handling (e.g., easily attached to mask seal)

Versatile

- Modular system
- Accessories: quick-release cord
- Mask seal 30 hPa / 40 hPa
- Elbow
 - vented = transparent, includes anti-asphyxia valve
 - non-vented = blue
- Three variations in four sizes (S, M, L and **new: XL**) each for varying purposes:
 - JOYCE Full Face – vented (incl. exhalation system) and soft mask seal, up to 30 hPa (OSAS)
 - JOYCE Full Face 40 hPa – vented (incl. exhalation system) and hard mask seal, up to 40 hPa
 - JOYCE Full Face NV 40 hPa – non-vented (without exhalation system) and hard mask seal, up to 40 hPa (ventilation)

Now
also in XL



JOYCE

**JOYCE, JOYCE 40 hPa,
JOYCE NV, JOYCE NV 40 hPa**

Nasal masks

JOYCE can be assembled specially for each sleep apnea or home mechanical ventilation patient. JOYCE is available in four mask models in four sizes each with two mask seals of different strengths. All these standard masks are available as vented and non-vented variations.

Comfortable

- Proven ball-and-socket joint
- A choice of two mask seals: for low and medium therapy pressure up to 30 hPa; for high therapy pressure of up to 40 hPa
- Optional integrated exhalation system
- Four standard models in four sizes (S, M, L and **new: XL**) each, packed ready to use
- Mask seal is simply pressed into place with palm of hand
- Extra-small shape
- Extremely quiet
- Anatomically molded, skin-friendly mask seal
- Breathable headgear with practical clip hooks
- Adjustable forehead support, wide cushion
- Stopper for pressure measurement connection

Easy care

The mask can be completely disassembled and cleaned in the dishwasher.

JOYCE GEL

JOYCE Full Face GEL

Only from Weinmann:

Nasal AND Full Face Gel Masks

JOYCE, the proven mask for every sleep apnea and home mechanical ventilation patient, is now available as a nasal or full face mask in a gel model. Unmatched wearing comfort distinguishes the newest generation of individually assembled masks.

- The only gel mask with ball-and-socket joint
- For a very good fit
- Pleasantly soft feel, very light
- Mask seal AND forehead cushion of gel
- Coated with skin-friendly silicone, only the filling is made of gel
- Particularly hygienic, thanks to single-layer mask seal
- Familiar JOYCE modular system



JOYCE GEL NV



JOYCE GEL



JOYCE Full Face GEL NV



JOYCE Full Face GEL

Compliance



Compliance is the term used to describe the extent to which the patient is willing to follow the doctor's instructions for (long-term) treatment. It covers the patient's observance of the doctor's orders to take medication and to use the prescribed therapy – even when he doesn't always believe in the effectiveness of the therapy or finds it unpleasant or fails to see an immediate improvement.



JOYCE Full Face⁺

The full face mask with the plus in extra chin stability

Secure fit together with greater wearing comfort – those are the features that distinguish JOYCE Full Face, the tried and tested mask for every sleep apnea and home ventilation patient, from the rest. In this model JOYCE Full Face⁺ works with a two-chamber principle. The first chamber is for the mouth and nose and the second holds the chin as needed. More security results in optimum therapy.

Effective and secure

- A mask seal surrounds the nose, mouth and chin.
- The two-chamber principle:
 - ▣ The first chamber covers the nose and mouth as does JOYCE Full Face. Consequently we create – as before – minimum dead space.
 - ▣ The second chamber holds the chin without generating an unpleasant flow of air across the chin. The lower part of the seal does not lie directly on the chin. If the chin should fall, it will be caught. Air holes prevent sweating.

JOYCE Full Face⁺

Rear view

- In keeping with our proven modular design, all parts except the mask seal are identical to those of JOYCE Full Face.

SOMNOplus

SOMNOplus with integrated exhalation system, HEADstrap headgear and EasyClip fasteners

With SOMNOplus everything comes pre-assembled: the freedom-of-movement mask, the integrated exhalation system and the headgear made of breathable material. If the patient wants to get out of bed during the night, he can separate the hose from the mask with one simple touch.



SOMNOplus

SOMNOmask

SOMNOmask, SOMNOmask blue

The mask that lets a patient relax and sleep through the night

SOMNOmask allows the patient to move around in his sleep as much as he wants to while the mask stays in place. The nasal mask has a ball-and-socket joint that picks up head movements and gently directs them to the hose. The hose can't lift the mask up or cause disruptive leaks.

Safe and effective

- Hardly any CO₂ rebreathing
- Slight pressure sufficient for a reliable seal
- Reduced tension on hose – better air-tightness

User-friendly

- Easy to use
- Easy to fit



SOMNOmask

SOMNOmask blue

Comfortable

- Ball-and-socket joint guarantees freedom of movement
- ISO cone: adaptation to all available exhalation systems
- Kind to the skin – mask doesn't "stick" to face

HEADstrap

Just one single headgear for all patients

Therapeutic success or failure is determined to a great extent by ventilation masks as they provide the most sensitive of all interface functions in a patient's therapy.

The overall wearing comfort of a ventilation mask depends on how well the mask fits, how easy it is to use and how comfortably the fasteners fit. HEADstrap, our new headgear for masks, fulfills all these requirements. The four-point headgear crosses the back of the patient's head. In contrast to conventional headgear, HEADstrap ensures that no pressure is applied to the patient's neck. HEADstrap is suitable for every head size and is very easy to use. The slits through which the straps slide permit nearly limitless adjustment. The strap across the back of the head can be fitted to any head size quickly and easily.

HEADstrap

The headgear for all mask types and sizes made by Weinmann

The circular opening holds the headgear firmly in place on the back of the patient's head and thus makes annoying slippage a thing of the past. The crosswise strap construction provides even more holding power.

HEADstrap is made of a breathable, skin-friendly material and is delivered with either headgear clips (for JOYCE and JOYCE Full Face¹⁾) or EasyClip²⁾.

Effective immediately, HEADstrap will be provided with all our mask sets. It can also be ordered separately. Now only one headgear is required for all masks. All this means that we now have masks that fit nearly every face and headgear that fits all patients.

- 1) WM 26360 for JOYCE and JOYCE Full Face
- 2) WM 26365 for SOMNOmask und SOMNOplus



Exhalation System Accessories

1 Silentflow 2

The air flows quietly through the outlet gap and along the hose.

2 Noise suppressor

The air quietly bubbles out through micropores.





Technical Data

A Sleep Diagnosis

SOMNOcheck effort, SOMNOcheck 2, SOMNOcheck 2 R&K, SOMNOlab, SOMNOlab-Headbox and -Transferbox.....	TD 2
SOMNOmanager, SOMNOlab PC-Software, MULTIBASE 2, OXYCOUNT mini, CAPNOCOUNT mini, smartOx.....	TD 3

B Sleep Therapy

SOMNOcomfort 2, CPAP20e, SOMNOsoft +, SOMNObalance, SOMNOsmart 2	TD 4
SOMNOvent CR, SOMNOvent S, SOMNOvent ST, SOMNOset	TD 5
SOMNOclick 300, Bacteria filter, O ₂ valve, SOMNOaqua, SOMNOSupport, Converter box, Converter cabel.....	TD 6

C Home Mechanical Ventilation

VENTIlogic, VENTImotion, BiLevel ST 22,	TD 7
VENTIclick, VENTI-O ₂ , VENTIpower, Analogbox D/A.....	TD 8
Converter box, Converter cabel, VENTIpower Charger, VENTIsupport	TD 9

D Oxygen Medicine

OXYMAT 3, easyOX, OXYFLOW Basic, OXYFLOW Revi, OXYcontrol 2, OXYBAG Hit.....	TD 10
OXYWAY Fix, OXYWAY Fine, OXYWAY Fast, OXYWAY Click, OXYTRON 3, CYPRESS, ACCUVAC Basic.....	TD 11

E Patient Interface

JOYCE, JOYCE Full Face, SOMNOplus, SOMNOmask, Silentflow 2, Noise Suppressor	TD 12
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Certified Quality
Management System
meeting EC directive 93/42/EEC,
Annex II [EN ISO 9001:2000/EN ISO 13485]



Sleep Diagnosis

	SOMNOcheck effort	SOMNOcheck 2 / SOMNOcheck 2 R & K	SOMNOlab
Technical Data			
Product class as per 93/42/EEC:	II a	II a	II a
Dimensions (W x H x D):	65 x 130 x 30 mm	80 x 150 x 34 mm	Bodybox: 65 x 130 x 30 mm Headbox: 66 x 107 x 31 mm Transferbox: 95 x 155 x 47 mm
Weight:	about 240 g (with power pack)	about 300 g (device without sensors)	about 500 g (without PC)
Power supply:	NiMH power pack (WM 94051)		
Average power consumption:	about 340 mW	about 340 mW	
Operating life of battery pack:	about 13 hours	wireless online = about 10 hours. portable = about 20 hours	
Storage:	integrated data storage with data retention even in event of power loss	depends on CF board used, standard 128 MB	depends on system (see System Requirements)
Data output:	RS232 to PC with charger (WM 94060)	via USB cable or Bluetooth	via fiber optic cable or LAN
Power Pack			
Charging:	quick-charge within 120 minutes; approx. 500 charges possible	Ladung in max. 3 Std., auch extern	
Signals/Messages			
LEDs:	for discharged power pack and during charging, stand-by, sensor test, recording, data transmission	power pack status, memory board status, execution and results of sensor and impedance tests, communication with PC	execution and results of sensor and impedance tests
Audio:	at loss of sensor and at start of recording stand-by mode		
Position Sensor			
Position sensor:	sensor integrated in device	sensor integrated in device	sensor integrated in device
Range:	right side, left side, abdomen, back, standing	right side, left side, abdomen, back, standing	right side, left side, abdomen, back, standing
Position precision:	about 45° ± 15°	about 45° ± 15°	about 45° ± 15°
CPAP/BiPAP/SmartPAP Pressure			
Measurement range:	0–20 hPa	0–40 hPa	0–20 hPa
Precision:	± 0.2 hPa	± 1 hPa	± 0.2 hPa
Pulsoximeter(-Clipsensor)			
SpO ₂ measurement range:	50–99 %	50–100 %	50–99 %
SpO ₂ precision:	at SpO ₂ above 85 %: ± 1.5 percentage points at SpO ₂ between 75 % and 85 %: ± 2 percentage pts. at SpO ₂ between 50 % and 75 %: ± 3 percentage pts.	70 % < SpO ₂ < 100 % better than 2 % precision SpO ₂ < 70 % not validated	at SpO ₂ above 85 %: ± 1.5 percentage points at SpO ₂ between 75 % and 85 %: ± 2 percentage pts. at SpO ₂ between 50 % and 75 %: ± 3 percentage pts.
Pulse rate measurement range:	30 to 250 bpm	30 to 250 bpm	30 to 250 bpm
Pulse precision:	± 1 %	± 1 bpm to 2 % of displayed value	± 1 %
Respiratory Flow/Snore Sensor			
Respiratory flow/snore sensor:	three thermistors as total signal, no measurement function at ambient temperatures between 33 °C and 38 °C	three thermistors as total signal, no measurement function at ambient temperatures between 33 °C and 38 °C	three thermistors as total signal, no measurement function at ambient temperatures between 33 °C and 38 °C
Range:	8 bit		
Snore sensor:	integrated microphone	integrated microphone	integrated microphone
Method:	logarithmic mean of inspiratory snoring noise	logarithmic mean of inspiratory snoring noise	logarithmic mean of inspiratory snoring noise
Range:	8 bit	8 bit	8 bit
Respiratory Flow/Snore Nasal Cannula			
Respiratory flow/snore nasal cannula:	difference from ambient air pressure; resolution to 10 hPa	inspiratory/expiratory pressure fluctuation	inspiratory/expiratory pressure fluctuation
Sensor:		pressure sensor	—
Method:	flow approximation through square-root calculation	flow approximation through square-root calculation	—
Range:	8 bit	8 bit	8 bit
Snore:	difference from ambient air pressure; bandpass filter 30–250 Hz	difference from ambient air pressure; bandpass filter 32–220 Hz	difference from ambient air pressure; bandpass filter 30–250 Hz
Method:	logarithmic mean of inspiration signal	logarithmic mean of acoustic pressure signal (microphone) or pressure fluctuation (pressure sensor)	logarithmic mean of acoustic pressure signal (microphone) or pressure fluctuation (pressure sensor)
Range:	8 bit	8 bit	8 bit
Respiratory Flow/Mouth Sensor			
Respiratory flow/mouth sensor:	—	8 bit	—
Therapy monitoring:	mask pressure measurement with pressure measurement hose	differential pressure measurement with pneumo-T-adaptor	mask pressure measurement with pressure measurement hose
Effort Sensors			
Effort (Thorax and Abdomen):	piezo sensor	piezoelectric crystal sensor integrated in housing	piezoelectric crystal sensor
Range:	8 bit	8 bit	8 bit
Thorax Sensor:	piezo sensor	sensor integrated in housing	piezoelectric measurement
Method:	piezoelectric measurement	piezoelectric measurement	piezoelectric measurement

SOMNOcheck 2 R & K

R & K trunk cable and EKG trunk cable			
ExG channel	EEG	EOG	EKG
Dynamic range (physical range of values):	± 500 µV	± 500 µV	± 500 µV
Resolution:	12 Bit	12 Bit	12 Bit
Amplitude precision:	± 3 %	± 3 %	± 3 %
Frequency range in hardware:	0.2 – 70 Hz	0.2 – 70 Hz	0.05 – 70 Hz
High pass in device software	0.5 Hz	0.5 Hz	0.02 Hz
Precision:	± 3 %	± 3 %	± 3 %
Scan rate:	256 Hz		
Inlet impedance:	about 40 MΩ		
NOTE:	These channels are permanently configured.		

SOMNOcheck 2

electro-physiological signals				
Channel:	ECG	EEG	EMG	EOG
Dynamic range (physical range):	± 5 mV	± 500 µV	± 250 µV	± 500 µV
Resolution:	12 bit	12 bit	12 bit	12 bit
Lower frequency limit:	0,16 Hz	0,5 Hz	2,7 Hz	0,5 Hz
Upper frequency limit:	100 Hz	100 Hz	500 Hz	100 Hz
Precision:	± 3 %	± 3 %	± 3 %	± 3 %
Can be set:	EMG, EOG, EEG, ECG			
Specifications:	like EMG, EOG, EEG, ECG			
Port impedance:	about 40 MΩ			

SOMNOlab Headbox

electro-physiological signals				
Channel	ECG	EEG	EMG	EOG
Dynamic range (physical range):	± 5 mV	± 500 µV	± 250 µV	± 500 µV
Resolution:	12 bit	12 bit	12 bit	12 bit
Lower frequency limit:	0.16 Hz	0.53 Hz	3,1 Hz	0.53 Hz
Upper frequency limit:	90 Hz	70 Hz	500 Hz	70 Hz
Amplification (ap-prox.):	about 400	about 4000	about 8000	about 4000
2 available configurable electro-physiological ports				
Can be set:	EMG, EOG, EEG, ECG			
Specification:	like EMG, EOG, EEG, ECG			
Electrodes:	Protected plug connection complies with DIN 42802, 1.5 mm			

1 hPa ± 1 mbar

Sleep Diagnosis

SOMNOlab Transferbox

Three available analog ports

Input voltage range (analyzable):	± 1 V
Amplification factor:	1
Precision:	± 4 %
Isolation voltage analog port:	1500 V AC
Data transmission baud rate:	230400 bauds
Data output:	optical waveguide to PC
Brightness sensor:	photocell

SOMNOmanager

System Requirements

Processor:	min. Intel Pentium II 400 MHz or compatible
Memory:	min. 64 MB RAM (128 MB RAM recommended)
Available memory on hard disk:	min. 100 MB hard disk drive C
Drive:	CD/DVD-ROM drive, optional CD/DVD burner drive
Graphics card/Resolution:	supported by Microsoft Windows with a minimum resolution of 800 x 600 (65536 colors)
Input:	keyboard and mouse or other pointer device
Peripheral devices:	—
Optional peripherals:	—
Operating System:	Microsoft Windows 95/98/ME/NT4.0/2000/XP Internet Explorer 5.01 or higher ADO database driver MDAC 2.1 or higher
Other Software:	Microsoft Word 97/2000/XP (is not a part of SOMNOmanager)
Systems supported:	SOMNOlab PC software SOMNOsupport

SOMNOlab PC-Software

min. Intel Pentium III 1GHz (SOMNOcheck2) min. Intel Pentium IV 2 GHz (SOMNOlab)
min. 256 MB RAM (512 MB RAM recommended)
min. 150 MB for program data min. 2.8 GB for a recording
CD/DVD-ROM drive, optional CD/DVD burner drive
supported by Microsoft Windows with a minimum resolution of 1024 x 768 (65536 colors)
keyboard and mouse or other pointer device
available Windows-supported USB port USB-Port (USB 1.1) Fast /Gigabit Ethernet adapter (e.g. WM 98130)
RS232-optical wave guide board for PC (WM 98240) serial interface board (WM 98250) array MPEG encoder board (WM 98230) optical wave guide-TCP/IP kit for SOMNOlab (WM 98450) Bluetooth adapter (WM 95085) USB server (WM 95085) LAN video camera (WM 98613)
Microsoft Windows 2000 starting with SP2 Microsoft Windows XP starting with SP1 Internet Explorer 6 or higher
Acrobat Reader starting with Version 5 Microsoft Word starting with Version 2000
SOMNOcheck 2 SOMNOlab

	MULTIBASE 2	OXYCOUNT mini	CAPNOCOUNT mini	smartOx
Technical Data				
Weight:	about 500 g without accessories	about 160 g	about 320 g	about 72 g with batteries
Dimensions (W x H x D):	165 x 165 x 65 mm	65 x 128 x 27 mm	65 x 128 x 35 mm	32 x 136 x 24 mm
Product class as per 93/42/EEC:	II a	II a	II a	II b
Classification as per EN 60601-1: – Protection from electric shock – Degree of prot. from elec. shock	protection class II type BF	protection class II type BF	protection class II type BF	protection class II type BF
Service life:	—	about 30 hrs with NiMH battery pack	about 3 hrs with rechargeable NiMH	—
Power supply:	power supply plug 230 V/12 V or 12-V service cable for vehicular power supply	9-V long-life alkaline battery or 7.2-V NiMH battery pack	9-V battery or 7.2-V battery pack (NiMH)	—
Power consumption:	about 3 W, 7 W for print operation	100 mW without illumination 150 mW with illumination	1.2 W	—
Loudspeaker:	100 mW, infinitely adjustable, 0 to about 70 dB(A)	for pulse tone and alarms	—	—
Charging time:	battery pack in measurement device: 16 hrs reserve battery pack in MULTIBASE 2: 2 hrs	battery pack in measurement device: 16 hrs	about 16 hrs	—
Reserve battery pack in MULTIBASE 2:	2 hrs	—	—	—
PC interface:	RS 232, SubD 9-pin	—	—	—
9-V batteries:	—	about 24 hrs	about 30 mins	—
Measurement method:	—	split pulse wave with fuzzy logic control	IR-photometric method	—
Tested in accordance to:	—	EN 60601-1, prEN 865	EN 60601-1, prEN 864	IEC 601
Operating temperature:	0 °C to +45 °C	0 °C to +45 °C	+5 °C to +40 °C	0 °C to +45 °C
Storage temperature:	—	–20 °C to +70 °C	–20 °C to +70 °C	–20 °C to +70 °C
Humidity:	0–90 % (no condensation)	0–90%	0–95% (no condensation)	0–90 % (no condensation)
Measurement range:	—	SpO ₂ : 0–99 % pulse rate: 30–250 bpm	etCO ₂ : 3–75 mmHg or 0.4–9.9 % Vol. respiratory rate: 2–60 bpm ± 1 bpm	SpO ₂ : 45–100 % pulse rate: 20 to 300 bpm
Precision:	—	SpO ₂ > 85 %: ± 1.5 percentage points SpO ₂ 75–85 %: ± 2 percentage points SpO ₂ 50–75 %: ± 3 percentage points pulse rate: ± 1 %	3–38 mmHg: ± 2 mmHg 39–75 mmHg: ± 5 % of measured value 0.4–5 % Vol.: ± 0.2 % Vol. 5.1–9.9 % Vol.: ± 5 % of measured value time required to meet specification: about 2 mins	saturation: ± 2 % (70–100 %) pulse rate: ± 1 bpm to 100 bpm ± 1 % > 100 bpm
Alarms:	amplification of acoustic alarms issued by CAPNOCOUNT mini and OXYCOUNT mini	SpO ₂ , pulse, sensor error, signal strength, battery	apnea alarm; etCO ₂ high + low; AF: high + low, occlusion alarm, red LED	—
Signal:	—	visual, acoustic, depending on alarm priorities	etCO ₂ in mmHg or % Vol., respiratory rate, cont. CO ₂ in bar chart, alarm limits, change battery pack, text display	acoustic and visual signals (pulse rate, sensor status, system error and battery status), Signal: on/off, pulse tone: variable tone pitch (depending on the measured O ₂ saturation)
Displays:	—	LCD with green backlighting and red LED alarm	LCD with green backlighting red LED alarm	LCD with white backlighting and red, orange and green LEDs display of %SpO ₂ , pulse rate, bar chart, signal quality, battery and sensor status
Batteries:	—	9-V long-life alkaline battery	9-V long-life alkaline battery	2 x AAA alkaline batteries (> 20 hours of continuous measurement)
Storage:	—	data storage for SpO ₂ , pulse rate and quality, capacity of 7 hrs, data buffer (at least 30 mins) during battery change	etCO ₂ and respiratory rate every 2 seconds, time at start and end of measurement, capacity of 8 hrs, data buffer during battery change	—
Data port:	—	RS 232 to communicate with MULTIBASE 2	RS 232 to communicate with MULTIBASE 2	—

1 hPa ± 1 mbar

Sleep Therapy

	CPAP20e	SOMNOcomfort 2e	SOMNOsoft +	SOMNObalance e	SOMNOsmart 2
Technical Data					
Product class as per 93/42/EEC:	IIa	II a	II a	II a	II a
Dimensions (WxHxD)	210 x 90 x 270 (mm)	210 x 90 x 270 (mm)	180 x 90 x 320 mm	210 x 90 x 270 (mm)	180 x 90 x 320 (mm)
Weight:	about 1.25 kg	about 1.7 kg	about 3.4 kg	about 1.7 kg	about 3.6 kg
Temperature range					
■ Operation:	+5 °C to +35 °C	+5 °C to +35 °C	+5 °C to +35 °C	+5 °C to +35 °C	+5 °C to +35 °C
■ Storage:	-20 °C to +70 °C	-40 °C to +70 °C	-20 °C to +70 °C	-40 °C to +70 °C	-20 °C to +70 °C
Electrical connection:	115 – 230 V AC +10 / -15%, 50 – 60 Hz with power pack WM 24480 or 12-24 V DC -15 / +25% with DC adapter WM 24469	115/230 V AC, 50-60 Hz with power supply WM 24480, or 12-24 V DC with DC-Adapter WM 24469	115/230 V AC, 50-60 Hz or 12/24 V DC (with converter). In order to guarantee the pressure consistency required in HMV, a maximum voltage drop of 10% is allowed.	115/230 V AC, 50-60 Hz with power supply WM 24480, or 12-24 V DC with DC-Adapter WM 24469	115/230 V AC, 50-60 Hz or 12/24 V DC with converter WM 24131 or WM 24132 (in order to guarantee the pressure consistency required in HMV, a maximum voltage drop of 10% is allowed)
Current consumption					
at 230 V:	operation: 0.1 A storage: 0.02 A	operation: 0.1 A storage: 0.02 A	operation: 0.1 A standby: 0.02 A	operation: 0.1 A storage: 0.02 A	operation: 0.1 A standby: 0.002 A
at 115 V:	0.2 A 0.03 A	0.2 A 0.03 A	0.2 A 0.03 A	0.2 A 0.03 A	0.2 A 0.03 A
at 12 V:	1.6 A 0.24 A	1.8 A 0.24 A	1.5 A 0.6 A	1.5 A 0.6 A	1.9 A 0.6 A
EN 60601-1 classification:	protection from electric shock: protection class II / degree of protection from electric shock: type B				
Electromagnetic compatibility EN 60601-1-2:					
- Radio interfer. suppression:	EN 55011				
- Radio interference resistance:	EN 61000-4 parts 2 to 6, part 11				
Mean sound pressure level / operation as per EN ISO 17510 in patient position at distance of one meter from device:	approx. 30 dB (A) at 10 mbar	approx. 27 dB (A) at 10 hPa	approx. 26 dB(A) at 10 hPa	approx. 27 dB (A) at 10 hPa	approx. 26 dB (A) at 10 hPa
Air pressure range:	600-1100 hPa (automatic altitude adjustment; 600 corresponds to 4000 meters)				
Pressure constancy measured as per EN ISO 17510:	at 10 hPa: $\Delta p = 0.8$ hPa	at 9 hPa: $\Delta p = 0.4$ hPa	at 12 hPa: $\Delta p = 0.4$ hPa	at 9 hPa: $\Delta p = 0.5$ hPa	at 12 hPa: $\Delta p = 0.4$ hPa
Operation / storage humidity:	95% relative humidity (no condensation)				
Therapy pressure range:	CPAP 4-20 hPa, precision ± 1 hPa	CPAP 4-20 hPa, precision ± 1 hPa	CPAP 4-18 hPa, precision ± 0.4 hPa	CPAP, APAP 4-20 hPa, precision ± 1 hPa	APAP 4-18 hPa, precision ± 0.4 hPa
Modes:	CPAP	CPAP	CPAP with softPAP	CPAP, APAP each with softPAP	APAP, CPAP
Softstart:	yes				
Flow at max. speed at:	10 hPa 120 l/min	9 hPa 125 l/min	12 hPa 130 l/min	9 hPa 150 l/min	12 hPa 150 l/min
Fine filter separation level	up to 1 μm : $\geq 99.5\%$, up to 0.3 μm : $\geq 85\%$				
Fine filter service life:	≥ 250 hours with normal room air				
Serial interface RS 485:	Only for connection to SOMNOadjust WM 23930 and SOMNOsupport WM 23975 by authorized personnel or for control of O ₂ valve WM 24042. power consumption SOMNOadjust: max. 163 mA with SOMNOsmart 2 feed to PSG				
Analog port 0-1 VDC	—	—	Two of following analog signals can be selected: - Pressure - Flow - Leakage	Two of following analog signals can be selected: - Pressure - Flow - Leakage - OPP (Obstructive Pressure Peak) - rAMV (relatives respiratory minute volume)	Two of following analog signals can be selected: - Pressure - Flow - Leakage - OPS (Oscillatory Pressure Signal)
Maximum marginal pressure for first error:	< 40 hPa	< 40 hPa	< 30 hPa	< 40 hPa	< 30 hPa
Heating of respiratory air as per EN ISO 17510:	2.5 °C				
Signal feed:	—	—	Signals, respiratory events and compliance data		

1 hPa $\hat{=}$ 1 mbar

Sleep Therapy

	SOMNOvent CR	SOMNOvent S	SOMNOvent ST	SOMNOset
Technical Data				
Product class as per 93/42/EEC:	IIa	II a	II a	II a
Dimensions (WxHxD)	180 x 90 x 320 mm			
Weight:	about 3.4 kg	about 4.0 kg	about 4.0 kg	about 3.6 kg
Temperature range				
■ Operation:	+5 °C to +35 °C			
■ Storage:	-20 °C to +70 °C			
Electrical connection:	115/230 V AC (±10%), 50–60 Hz or 12/24 V DC (with AC converter WM 24131 or WM 24132)	115/230 V AC, 50-60 Hz or 12/24 V DC with converter WM 24131 or WM 24132 (in order to guarantee the pressure consistency required in HMV, a maximum voltage drop of 10% is allowed)		
Electrical output:	—			Operation: 15 VA*
Current consumption	operation: standby:	operation: standby:	operation: standby:	operation: standby:
at 230 V:	0.11 A 0.02 A	0.1 A 0.015 A	0.1 A 0.015 A	0.1 A 0.015 A
at 115 V:	0.22 A 0.03 A	0.2 A 0.03 A	0.2 A 0.03 A	0.2 A 0.03 A
at 12 V:	1.5 A 0.6 A	1.9 A 0.29 A	1.9 A 0.29 A	1.9 A 0.29 A
EN 60601-1 classification:	protection from electric shock: protection class II / degree of protection from electric shock: type B			
Electromagnetic compatibility	Test parameters and limits can be requested from the manufacturer as needed.			
EN 60601-1-2:	EN 55011			
- Radio interfer. suppression:	EN 61000-4 Parts 2 to 6, Part 11			
- Radio interference resistance:				
Mean sound pressure level / operation as per EN ISO 17510 in patient position at distance of one meter from device:	about 26 dB (A) at 10 hPa			
Air pressure range:	600 – 1100 hPa (automatic altitude adjustment, allows operation up to about 4000 meters)			
Pressure constancy measured as per EN ISO 17510:	at 10 hPa Δp = 0.3 hPa	at 6 hPa: Δp = 0.3 hPa	at 12 hPa: Δp = 0.4 hPa	at 12 hPa: Δp = 0.4 hPa
Operation / storage humidity:	≤ 95% rel. humid. (no condensation)			
Therapy pressure range:	4-20 hPa, precision ±0.4 hPa	IPAP 4-20 hPa, EPAP 4-18 hPa, precision ±0.4 hPa	4-18 hPa, precision ±0.4 hPa	
Background frequency	automatic; 8 1/min	—	—	—
Respiratory rate:	—	background frequency: 6/minute	from 5 to 45/minute	—
Modes:	CR (AZMV with auto EEPAP)	CPAP, B-Level-S	CPAP, BiLevel-S, BiLevel ST, BiLevel T	—
Softstart:	yes	in CPAP and Bi-Level mode		—
Pressure ramp speed:	—	adjustable in 3 levels	adjustable in 3 levels	—
Trigger threshold:	—	adjustable in 5 levels, separate for inspiration and expiration		—
Flow at max. speed at:	6,5 hPa 160 l/min	12 hPa 165 l/min	—	—
Fine filter separation level	up to 1 µm: ≥ 99.5 %, up to 0.3 µm: ≥ 85%			
Fine filter service life:	≥ 250 hours with normal room air			
Serial interface RS 485:	Only for connection to SOMNOadjust WM 23930 and SOMNOsupport WM 23975 by authorized personnel or for control of O ₂ valve WM 24042. power consumption SOMNOadjust: max. 163 mA with SOMNOsmart 2 feed to PSG			
Analog port:	Two of following analog signals can be selected:: - Pressure - Flow - Leakage	—		Two of following signals can be selected: therapy pressure 0 to 1 VDC = 0 to 20 hPa flow: 0 to 1 VDC = -250 to +250 l/min Oscillatory Pressure Signal (OPS): 0 to 1 VDC = 0 to 100% loss of flow: 0 to 1 VDC = 0 to 100 l/min
Maximum marginal pressure for first error:	< 30 hPa	< 36 hPa	< 36 hPa	< 30 hPa
Heating of respiratory air as per EN ISO 17510:	2.5 °C			
Signal feed:	Signals, respiratory events and compliance data			—

*Data apply only in combination with the approved therapy devices

1 hPa ± 1 mbar

Sleep Therapy

	SOMNOclick 300	SOMNOaqua	Bacteria filter	O₂-Valve
Technical Data				
Product class as per 93/42/EEC:	II a	IIa	II a	IIa
Dimensions:	120 x 85 x 155 mm (W x H x D)	140 x 100 x 121 mm (W x H x D)	74 x 98 mm (Ø x L)	45 x 85 x 30 mm (W x H x D)
Weight:	220 g	300 g	about 51 g	125 g
Temperature range:	operation: +5 °C to +35 °C, storage: -20 °C to +70 °C	operation: +5 °C to +35 °C, storage: -40 °C to +70 °C	operation: +5 °C to +40 °C, storage: -20 °C to +70 °C	operation: +5 °C to +40 °C, storage: -20 °C to +70 °C
Electrical connection*:	30 V DC	30 V DC	—	—
Electrical output*:	15 VA	15 VA	—	—
Classification as per EN 60601-1* – Protection from electric shock: – Degree of protection from electric shock:	type B	type B	—	protection class II type B
Electromagnetic compatibility as per EN 60601-1-2*: – Radio interference suppression – Radio interference resistance	EN 55011 (VDE 0875 T11) IEC 1000-4, parts 2-6, 11	EN 55011 B IEC 1000-4, parts 2-6, 11	—	EN 55011 EN 61000-4, parts 2-6, 11
Mean sound pressure level / operation as per EN ISO 17510 from patient position at distance of one meter from device:	—	—	max. 0.5 dB(A)	—
Air pressure range:	700–1060 hPa	700 to 1060 hPa	700–1060 hPa	700–1060 hPa
Therapy pressure range:	—	—	3–35 hPa	—
Maximum amount allowed:	300 ml	300 ml	—	—
Max. operating pressure allowed:	30 hPa	30 hPa	—	—
Max. flow (flowing off freely) allowed:	180 l/min	160 l/min	300 l/min	< 4 l/min O ₂
Max. mask temperature:	36 °C	—	—	—
Inner volume of bacteria filter:	—	—	85 ml	—
Usage time of particle filter	—	—	≤ 24 hrs	—
Gas leakage at 30 hPa:	not measurable	—	—	—
Electrical connection:	—	—	—	7–15 V DC
Current consumption: at 230 V at 115 V at 12 V	—	—	—	in operation: 96.0 mA in standby mode: 8.5 mA
Min. required O ₂ primary pressure at valve opening for 4 l/min O ₂ :	—	—	—	250 hPa
Max. allowable dynamic pressure of O ₂ system:	—	—	—	1500 hPa
Allowable therapy pressures:	—	—	—	4–30 hPa
Pressure drop: at a flow of 50 l/min at a flow of 100 l/min at a flow of 150 l/min	0.5 hPa 1.9 hPa 4.1 hPa	—	—	—
Housing material:	—	—	PC	—
Autoclavable housing in devices as per EN 285:	—	—	134 °C	—
User setting, which results in 100% rel. humidity at the patient connection port (at ambient rel. humidity : 70 %, Flow: 20 l/min, room temperature 15 °C/18 °C/23 °C)	setting 6	—	—	—

SOMNOsupport

System requirements

IBM compatible compute	– Graphics card: Microsoft Windows supported, resolution: 1024 x 768, max. resolution: 1600x1200
– Processor: Pentium III 700 MHz or better	– Input: Keyboard and mouse or other suitable pointing device supported by Microsoft Windows
– Free storage: Hard disk with at least 300 MB free storage space and 50 MB free storage space in system partition	– Printer: supported by MS Windows
– Active memory: at least 128 MB RAM (recommended 512 MB RAM)	– Operating system: Windows 2000 (SP4 or better), Windows XP (SP2 or better)*
– Connection: - For operating the converter box (WM 93316): A free, Microsoft Windows supported RS232 serial port (COM1 to COM4, 16550-compatible UART) or a USB port with a USB-to-RS232 adapter	*with software: Internet Explorer 6.0 SP1 or better, Adobe Acrobat Reader 6.0.
- For operating converter cable USBR5485 WM 93318): A free USB port.	– Recommended system: We recommend a Pentium III processor with a clock rate of at least 1 GHz, 512 MB RAM and a 17" VGA monitor.
– Drive: CD ROM drive	

Converter box

Converter cable USB-RS485

Technical Data

Device class EC 93/42 IIa:	II a	
Dimensions WxHxD:	135 x 55 x 30 mm	70 x 40 x 20 mm
Length of USB cable:	—	250 mm
Weight:	approx. 100 g	approx. 50 g
Temperature range:	+10 °C to +40 °C (Operation and storage)	
Relative humidity: Operation and storage	0 – 95% non-condensing	
Electromagnetic compatibility according to EN 60601-1-2 – Radio interference suppression – Radio interference resistance	EN 55011 (VDE 0875 T11) EN 61000-4 Parts 2 to 5	EN 55011 EN 61000-4 Parts 2 to 6, 11

Home Mechanical Ventilation

	VENTIclick	VENTI-O ₂	VENTIpower
Technical Data			
Product class as per 93/42/EEC:	II a	IIa	
Dimensions (W x H x D):	120 x 120 x 155 mm	80 x 93 x 30 mm	343 x 123 x 110 mm
Weight:	265 g	about 195 g	about 4.4 kg
Battery pack type:	—	—	20 NiMH cells, Form D, 6500 mAh
Battery pack operating time:	—	—	≥ 3.5 hrs at 35 W discharge voltage
Battery pack usable life:	—	—	≥ 500 charge cycles at typical DOD (depth of discharge) 50 %
Temperature range:	operation: +5 °C to +35 °C, storage: -40 °C to +70 °C	operation: +5 °C to +35 °C, storage: -40 °C to +70 °C	operation: +5 °C to +35 °C, storage: -15 °C to +50 °C (optimum: ≤ 20 °C)
Air pressure range:	600–1100 hPa	600–1100 hPa	700–1060 hPa
Pneumatic connection:	—	inlet: only hoses with inner diameter of 4 mm outlet: only hose system WM 23737	—
Electrical connection*:	40 V DC	12 V DC	—
Current consumption in operation:	—	125 mA	—
Electrical output*:	24 VA	—	—
Classification as per EN 60601-1*:	degree of protection from electric shock: type B	degree of protection from electric shock: type B protection from electric shock: protection class II	degree of protection from electric shock: type B protection from electric shock: protection class II IP X0
Water resistance:	—	—	—
Electromagnetic compatibility as per EN 60601-1-2*:	EN 55011 EN 61000-3-2, EN 61000-3-3, EN 61000-4-2 to 6 EN 61000-4-8, EN 61000-4-11	EN 55011 EN 61000-4-2 to 3, EN 61000-4-8	EN 55011 EN 61000-4 parts 2-6, 11
– Radio interference suppression:	—	—	—
– Radio interference resistance:	—	—	—
Operation / storage humidity:	< 95 % relative humidity	≤ 95 % relative humidity (no condensation)	≤ 90 % relative humidity (no condensation)
Output voltage range:	—	—	40 V DC, ± 5 %, 0–2000 mA; pulsed current up to 3 A for max. 500 ms; 12 V DC, ± 5 %, 100–600 mA; voltage stability over the complete on-load and input voltage range
Short-circuit-proof:	—	—	of any duration, short circuit current max. 200 % of maximum nominal current
Overvoltage protection:	—	—	output voltage of 40-V supply is independently monitored and switched off from 48 V ± 2 V.
Allowable leading load:	—	—	max. each 2200 µF
Max. allowable amount:	300 ml	—	—
Max. allowable operating pressure:	40 hPa	—	—
Max. allowable flow (flowing out freely):	300 l/min	≤ 4 l/min O ₂	—
Minimum required O ₂ primary pressure at valve opening for 4 l/min O ₂ :	—	250 hPa	—
Max. allowable static pressure of pressure source:	—	7000 hPa	—
Allowable therapy pressure:	—	4 to 35 hPa (1 hPa ≈ 1 cm H ₂ O)	—
Maximum mask temperature:	38 °C	—	—
Gas leakage at 30 hPa:	not measurable	—	—
Pressure drop:	—	—	—
at a flow of 50 l/min	0.5 hPa	—	—
at a flow of 100 l/min	1.7 hPa	—	—
at a flow of 150 l/min	3.8 hPa	—	—
User setting which results in 100 % rel. humidity at the patient connection port (at ambient rel. humidity: 70 %, flow: 20 l/min, room temperature 15 °C/18 °C/23 °C):	setting 6	—	—
Supply cable pin assignment:	—	—	Pin 1, 2: 40 V, black, brown Pin 3, 4: GND, red, orange Pin 5: 12 V, yellow Pin 6: ERROR, green PIN 7: POWER FAIL, blue PIN 8: SENSE, violet
Display precision:	—	—	5 LEDs in 20%-steps, display error as per calibration cycle ≤ 5 %
Switch-on threshold:	—	—	100 % LED: 95 % capacity; 80 % LED: 75 % capacity; 60 % LED: 55 % capacity; 40 % LED: 35 % capacity; 20 % LED: 15 % capacity
Switch-off threshold:	—	—	100 % LED: 85 % capacity; 80 % LED: 65 % capacity; 60 % LED: 45 % capacity; 40 % LED: 25 % capacity; 20 % LED: 5 % capacity

Analogbox D/A with VENTI ^{motion} /VENTI ^{logic}			
Channel	Messure value	Scaling	
		0 V	1 V
Channel 1	mask pressure	0 hPa	38 hPa
Channel 2	flow	-100 l/min	315 l/min
Channel 3	leakage flow	0 l/min	315 l/min
Channel 4	tidal volumes	0 ml	3000 ml
Channel 5	unassigned	—	—
Channel 6	unassigned	—	—
Channel 7	unassigned	—	—
Channel 8	unassigned	—	—

Analogbox D/A with BiLevel ST 22			
Channel	Messure value	Scaling	
		0 V	1 V
Channel 1	mask pressure	0 hPa	25 hPa
Channel 2	flow	-100 l/min	300 l/min
Channel 3	leakage flow	0 l/min	300 l/min
Channel 4	tidal volumes	0 ml	3000 ml
Channel 5	unassigned	—	—
Channel 6	unassigned	—	—
Channel 7	unassigned	—	—
Channel 8	unassigned	—	—

1 hPa ≈ 1 mbar

*Data apply only in combination with the approved therapy devices

Home Mechanical Ventilation

VENTIpower charger

Technical Data

Dimensions (W x H x D):	135 x 185 x 83 mm
Weight:	about 0.8 kg
Input voltage:	85–240 V DC, 50/60 Hz (automatic internal voltage switch)
Charging current:	2 A
Max. voltage at connections:	42 V
Classification in accordance with EN 60601-1:	degree of protection from electric shock: type B; protection from electric shock: protection class II
Electromagnetic compatibility in accordance with EN 60601-1-2:	radio interference suppression: EN 55011 (VDE 0875 part 11) radio interference resistance: EN 61000-4 parts 2 to 6

Converter box

Converter cable USB-RS485

Technical Data

Device class EC 93/42 IIa:	II a	
Dimensions WxHxD:	135 x 55 x 30 mm	70 x 40 x 20 mm
Length of USB cable:	–	250 mm
Weight:	approx. 100 g	approx. 50 g
Temperature range:	+10 °C to +40 °C (Operation and storage)	
Relative humidity: Operation and storage	0 – 95% non-condensing	
Electromagnetic compatibility according to EN 60601-1-2		
– Radio interference suppression	EN 55011 (VDE 0875 T11)	EN 55011
– Radio interference resistance	EN 61000-4 Parts 2 to 5	EN 61000-4 Parts 2 to 6, 11

VENTIsupport

System requirements

The VENTIsupport software requires an IBM compatible computer that satisfies the following requirements:

- Processor: Pentium III, 1 GHz or better
- Free storage:
at least 300 MB on a hard drive, at least 50 MB in system partition
- Active memory:
at least 128 MB RAM
- Connection:
free RS232 serial interface (COM1 to COM4, 16550-compatible UART)
- Drive:
CD ROM drive, at least 12x Graphics
- card:
VGA resolution or higher, color monitor (min. 1024x768, max. 1600x1200), card supported by MS Windows

- Input: keyboard and mouse or another suitable pointing device supported by MS Windows
- Printer:
supported by MS Windows
- Operating system:
MS Windows 2000 (Service Pack 4),
MS Windows XP (Service Pack 2)
- Software: Adobe Acrobat Reader 6.0;
Internet Explorer 6.0 SP1 or better.

Recommended system:

We recommend a Pentium III processor with a clock rate of at least 1 GHz, 512 MB memory, and a 17" VGA monitor.

Oxygen Medicine

	OXYMAT 3	easyOX easyOX/easyOX duo
Technical Data		
Product class as per 93/42/EEC:	II a	II a
Dimensions (W x H x D) in mm:	400 x 700 x 350	420 x 630 x 400
Weight:	about 20 kg	about 28 kg
Ambient temperature:		
Operation:	+10 °C to +40 °C	+10 °C to +40 °C
Storage:	-20 °C to +70 °C	-20 °C to +70 °C
Electrical connection:	230 V AC, 50 Hz	230 V, 50/60 Hz
Mean power output and current consumption:	360 W; 1.6 A	450 W, 1.9 A
Fuse:	T 2.5 A H 250 V as per EN 60127-2	line side: T5 AL 250 V internal: 8A 250 V 125 V
Classification (as per EN 60601-1)		
- Protection from electric shock:	protection class II	protection class II
- Degree of protection from electric shock:	type B	type B
Sound pressure level:	max. 40 dB(A)	< 45 dB(A)
Output:		
(values after 10 mins operation at +20 °C, 50 % relative humidity and 1013 hPa)	95 ± 1/-3 % Vol. O ₂ at 1-4 l/min 90 ± 3 % Vol. O ₂ at 5 l/min	95 ± 1/-3 % Vol. at 1-4 l/min 90 ± 3/-3 % Vol. at 5 l/min
Output		
at 2000 meters above sea level:	90 ± 3 % Vol. O ₂ at 5 l/min	—
at 1000 meters above sea level:	—	> 82 % Vol. O ₂ at 5 l/min
Outlet pressure:	0.6 bar (60 kPa)	0.6 bar (60 kPa)
Flow rate:	0.5 at 5 l/min alternative for children: 0.2-3 l/min, scaling in 0.2-l increments	easyOX: 0.5 at 5 l/min easyOX duo: each at 0.5 to 5 l/min, but only a total of 5 l/min is available
Warning of abnormal occurrence:	visual and acoustic	visual and acoustic
Electromagnetic compatibility	radio interference suppression: EN 55011 (VDE 0875 part 11) radio interference resistance: IEC 1000-4 parts 2-6 and 11	radio interference suppression: EN 55011 (VDE 0875 part 11) radio interference resistance: IEC 1000-4 parts 2-6 and 11
Maintenance:	once per year /after every 5000 operating hours	once per year /after every 5000 operating hours
Oxygen status OSCI as per DIN EN ISO 8359, warning at < 82 % Vol. O ₂ :	available (self-test)	available (integrated oxygen sensor)
Fulfilled product norm:	EN ISO 8359	EN ISO 8359

	OXYcontrol 2
Technical Data	
Fulfilled product norms:	EN 50104
Water resistance:	IP 64
Dimensions (W x H x D, mm):	65 x 120 x 30
Weight:	about 240 g
Ambient temperature:	
operation:	0 °C to +50 °C
storage:	-20 °C to +50 °C
Temperature compensation:	built-in NTC Compensation
Humidity, in operation:	up to 99 %
Electrical power	9 V alkaline block battery
Measurement range:	0-100 % Vol. O ₂
Display resolution	0,1 % O ₂
Precision:	max. 1 % from measurement range end value
Warm-up time:	< 13 s to 90% of end value
Electromagnetic compatibility	radio interference suppression: EN 55011 radio interference resistance: EN 610006-2

1 hPa ± 1 mbar
100 kPa ± 1 bar

	OXYFLOW Basic	OXYFLOW Revi
Technical Data		
Weight with cylinder jacket and maximum equipment:	25 kg	
Pressure reducer	OXYWAY Fine I	OXYWAY Fine I
Dimensions (W x H x D) in mm:	119–239 x 94 x 100	
Weight:	730 g	
High-pressure manual connection:	G 3/4"	
Connection bolt:	80 mm right	100 mm right
Nominal inlet pressure:	200 bar	
Nominal outlet pressure:	0.5–6.0 bar	
Outlet:	G 3/8"	
Flow:	3–15 l/min	
MPG device class:	II b	
Fulfilled norms:	EN 738-1	
Bubble humidifier		
Filling amount:	100 ml distilled water	
Fulfilled norms:	EN ISO 8185-1	
OMNIVAC secretion aspiration equipment		
Oxygen consumption:	—	13 l/min
Vacuum generated:	—	at least –0.5 bar
Collection canister:	—	500 ml and 1000 ml
Fulfilled norms:	—	EN ISO 10079-3
COMBIBAG		
MPG device class:	—	IIa
Dimensions (length x diam.):	—	340 x 130 mm (inflated)
Weight:	—	390 g
Application:	—	
– Child grip		10–16 kg body weight
– Adult grip		> 16 kg body weight
PONY carriage		
Dimensions (L x W x H) in mm:	650 x 650 x 900 (H = 1050 mm with cylinder jacket)	
Weight:	about 3.2 kg (with cylinder jacket about 4.6 kg)	
Allowable angle of inclination:	max. 10°	
Allowable load:	max. 100 kg	
Oxygen cylinder		
Contents:	10 l	
Maximum pressure:	200 bar	
Weight:	16 kg (filled)	
Oxygen administrator with three outlets		
Fulfilled norms:	DIN EN 737, CE 0197	
Connection bolts of different lengths and with different connection thread types are available. OXYFLOW Basic and OXYFLOW Revi are also available with the pressure reducers OXYWAY Fine II, Fine III, Fast I, Fast III.		

	OXYBAG Hit
Technical Data	
Pressure reducer:	OXYWAY Fine I
Product class as per 93/42/EEC:	IIb
Dimensions (W x H x D) in mm:	119 x 94 x 100
Weight:	730 g
Nominal inlet pressure:	200 bar
Nominal outlet pressure:	0.5-6.0 bar
Flow:	3-15 l/min
Standards fulfilled:	EN 738-1, CE 0197
Oxygen cylinder	
Contents:	0.8 l
Maximum pressure:	200 bar
Weight:	filled: 1.9 kg
Oxygen cylinder	
Contents:	2.0 l
Maximum pressure:	200 bar
Weight:	filled: 3.6 kg
Lightweight aluminum cylinder	
Contents:	2.0 l
Maximum pressure:	200 bar
Weight:	filled: 2.7 kg
Connection bolts of different lengths and with different connection thread types are available. OXYBAG Hit is also available with the pressure reducers OXYWAY Fine II, Fine III, Fast I, Fast III.	

Oxygen Medicine

OXYWAY Fix for permanently set oxygen flow					OXYWAY Fine for infinitely adjustable oxygen flow dosage			OXYWAY Fast for gradually adjustable oxygen flow dosage			OXYWAY Click Flow dosage for central gas systems				
WM number series:		30050	30100	30200	30300 30350	30500	30700	30750	30600	30800	30850	31000			
Dimensions in mm:	B	82	70	136–156	70–90	119–239	119–239	119–199	70–120	70–120	70–90	43			
	H	82	94	94	94	94	94	94	94	94	94	72			
	T	69	69	69	69	100	100	100	112	112	112	100			
High-press. manual connection:		country-specific threads										–			
Weight in grams:		530	530	640	530	730	730	730	710	710	750	335			
Nominal inlet pressure p1 in bar:		200										4.5			
Nominal outlet pressure p2 in bar:		4.5 ± 0.2				0.5–6			4.5 ± 0.2			–			
Flow Q1 in l/min:		4 ± 0.2		120 ± 15		3–15		1.5–8		0.5–3		0.5 ± 0.13	1 ± 0.5	1 ± 0.5	1 ± 0.5
												1 ± 0.25	2 ± 0.5	2 ± 0.5	2 ± 0.5
												1.5 ± 0.25	3 ± 0.5	3 ± 0.5	3 ± 0.5
												2 ± 0.25	4 ± 0.5	4 ± 0.5	4 ± 0.5
												2.5 ± 0.25	5 ± 0.5	5 ± 0.5	5 ± 0.5
												3 ± 0.25	6 ± 0.6	6 ± 0.6	6 ± 0.6
												4 ± 0.50	9 ± 0.9	9 ± 0.9	9 ± 0.9
												5 ± 0.50	12 ± 1.2	12 ± 1.2	12 ± 1.2
												6 ± 0.50	15 ± 1.5	15 ± 1.5	15 ± 1.5
2nd outlet:		–	–	min. 120	–	–	–	–	–	90 ± 10	–				
Opening pressure relief valve in bar:		7.4				10.4			7.4			–			
Temperature:	Operation	–20 °C to +60 °C										II a			
	Storage	–20 °C to +70 °C													
Product class as per 93/42/EEC:		II b										II a			
Fulfilled norms:		EN 738-1										EN 13220			

	OXYTRON 3	CYPRESS
Technical Data		
Product class as per 93/42/EEC:	II a	II a
Dimensions:	(W x H x D) 75 x 136 x 45 mm	(W x H) 110 x 76 mm
Weight:	about 330 g (without pressure reducer, incl. battery pack)	540 g including pressure reducer
Stages:	1–7	1–6
Oxygen dosage in ml:	10/20/30/40/50/60/70	16/32/48/64/80/96
Oxygen conservation rate in relation to continuous flow:	about 5 : 1	about 3 : 1
Continuous backup flow:	3 l/min (via separate adapter)	2 l/min ± 0.5 l/min
Pressure reducer:	separate (OXYWAY Fix for OXYTRON 3: 2-level, permanently set at 1.5 bar/12 l/min delivery of O ₂)	integrated (3/4 DIN G)
Ambient temperature operation:	–5 °C to +40 °C	0 °C to +50 °C
storage:	–20 °C to +70 °C	–40 °C to +63 °C
Classification as per EN 60601-1:	degree of protection from electric shock: type B water resistance: IPX 1	not relevant
Electromagnetic compatibility:	radio interference suppression: EN 55011 radio interference resistance: EN 61000-4-2 bis 6	not relevant
Alarms:	visual and acoustic at lack of oxygen supply, disconnection or low power reserves	none
Use with liquid oxygen systems:	yes, outlet pressure 1.5 ± 0.15 bar and at least 6 l/min delivery of O ₂	no
Power supply		
Battery pack:	3.6-V NiMH battery pack (WM 7295)	—
Batteries:	3 x 1.5-V type LR6 alkali-manganese batteries or AA	—
Charger		
Dimensions (W x H x D):	63 x 96 x 48.5 (86) mm	—
Weight:	about 500 g	—
Power supply:	230 V, 50 Hz, 70 mA	—
Temperature range:	operation: 0 °C to +40 °C storage: –40 °C to +70 °C	—
Classification as per EN 60601-1:	degree of protection from electric shock: type B	—
Battery pack		
Operating time:	about 50 hrs at stage 4 and 20 breaths per minute	—
Charging time:	< 2 hrs for full charge	—
Dimensions 3-in-1 transport bag (W x H x D)		
Dimensions (W x H x D):	200 x 750 x 170 mm	
Weight:	about 1160 g	

1 hPa ± 1 mbar

	ACCUVAC Basic
Technical Data	
Product class as per 93/42/EEC:	IIb
Fulfilled product norms:	EN ISO 10079-1, EN 1789
Water resistance:	IPX 1
Dimensions (W x H x D in mm):	385 x 280 x 140
Weight:	about 5.4 kg
Ambient temperature:	operation: –18 °C to +40 °C charging: 0 °C to +40 °C storage: –40 °C to +70 °C
Charge voltage:	12 to 13.8 V
Motor output:	50 W
Max. power consumption:	3.5 A
Battery type:	lead, 3.4 Ah
Battery service life:	400 charge and discharge cycles within about three years
Operation period after 14-hour charge:	30 mins at highest suction level
Suction capacity at 12 V and free flow:	> 20 l/min
Max. vacuum at 12 V:	0.8 bar (80 kPa)
Collection canister:	disposable or reusable collection canister
Overflow valve filter:	min. 99.8 % for particles of 2.8 µm
Volume of collection canister:	900 ml
Overflow protection:	overflow valve filter
Suction hose:	Ø 5 mm, length of 1800 mm
Wall bracket for ACCUVAC Basic and ACCUVAC Rescue	
Fulfilled product norms:	EN 1789
Dimensions (W x H x D):	140 x 185 x 33 mm
Weight:	270 g

Patient Interface

	JOYCE Full Face	JOYCE	SOMNOplus
Technical Data			
Product class as per 93/42/EEC:	II a	II a	II a
Dimensions (W x H x D)	about 107 x 160 x 106 mm	about 80 x 130 x 90 mm	80 x 140 x 90 mm
Weight	about 102 g	about 85 g	about 55 g
Therapy pressure range:	mask seal, soft 4–30 hPa mask seal, hard 4–40 hPa	mask seal, soft 4–30 hPa mask seal, hard 4–40 hPa	4–30 hPa
Hose connection:	cone as per DIN EN ISO 5356-1 JOYCE Full Face vented: Ø 22 mm (male) JOYCE Full Face non-vented: Ø 22 mm (female)	cone as per DIN EN ISO 5356-1 JOYCE vented: Ø 22 mm (male) JOYCE non-vented: Ø 22 mm (female.)	Cone as per DIN EN ISO 5356-1 Ø 22 mm
Pressure measurement port:	Ø 4 mm	Ø 4 mm	Ø 4 mm
Width of headgear clip:	max. 20 mm	max. 20 mm	max. 28 mm
Temperature range:	operation: +5 °C to +40 °C storage: –20 °C to +70 °C	operation: +5 °C to +40 °C storage: –20 °C to +70 °C	operation: +5 °C to +40 °C storage: –20 °C to +70 °C
Flow resistance:	JOYCE Full Face at 50 l/min: 0.02 hPa, at 100 l/min: 0.26 hPa JOYCE Full Face NV at 50 l/min: 0.09 hPa, at 100 l/min: 0.37 hPa	vented at 50 l/min: 0.02 hPa, at 100 l/min: 0.11 hPa non-vented at 50 l/min: 0.09 hPa, at 100 l/min: 0.37 hPa	at 50 l/min = 0.06 hPa at 100 l/min = 0.22 hPa
Anti-asphyxia valve (JOYCE Full Face) at device breakdown:	at 50 l/min 0.5 hPa at 100 l/min 2.0 hPa		
Sound pressure level at 10 hPa:	27.5 dB(A)	28 dB(A)	29 dB(A)
Cut-off pressure anti-asphyxia valve (JOYCE Full Face):	open: ≤ 2 hPa closed: ≤ 1 hPa		
Usage life:	6 to 12 months, depending on frequency of use and cleaning	6 to 12 months, depending on frequency of use and cleaning	6 to 12 months, depending on frequency of use and cleaning
Materials:	mask seal: silicone (LSR) forehead cushion: TPE/PP mask body: polycarbonate (PC) forehead support: polypropylene (PP) seal for ports: silicone (LSR) rotating sleeve: polypropylene (PP) safety ring: TPE/PP elbow: polycarbonate (PC) headgear clip: POM valve cartridge: TPE/PP HEADstrap: polyester/lycra, polyurethane, nylon/spandex All parts of the full-face mask are latex-free.	mask seal: silicone (LSR) forehead cushion: TPE/PP mask body: polycarbonate (PC) forehead support: polypropylene (PP) seal for ports: silicone (LSR) rotating sleeve: polypropylene (PP) safety ring: TPE/PP elbow: polycarbonate (PC) headgear clip: POM HEADstrap: polyester/lycra, polyurethane, nylon/spandex All parts of the nasal mask are latex-free	mask seal: silicone (LSR) mask body: polycarbonate (PC) elbow: polycarbonate (PC) rotating sleeve: polycarbonate (PC) seal for ports: silicone (LSR) forehead cushion: silicone (LSR) supprt: polypropylene (PP) HEADstrap: polyester/lycra, polyurethane, nylon/spandex All parts of the nasal mask are latex-free

	SOMNOmask	SOMNOmask blue
Technical Data		
Product class as per 93/42/EEC:	II a	
Dimensions (W x H x D)	about 80 x 140 x 90 mm	
Weight	about 50 g	
Therapy pressure range:	4–30 hPa	
Hose connector:	cone in conformance with DIN EN ISO 5356-1 Ø 22 mm	
Pressure measurement port:	Ø 4 mm	
Width of headgear:	max. 28 mm	
Temperature range:	operation: +5 °C to +40 °C storage: –20 °C to +70 °C	
Flow resistance:	at 50 l/min: 0.25 hPa at 100 l/min: 0.92 hPa	
Usable life:	6 to 12 months, depending on frequency of use and cleaning	
Materials:	mask body: polycarbonate (PC) mask seal: silicone (LSR) elbow connection: polycarbonate (PC) seal for ports: silicone (LSR) forehead cushion: silicone (LSR) support: polypropylene (PP) All parts of the nasal mask are latex-free.	

	Silentflow 2
Technical Data	
Product class as per 93/42/EEC:	II a
Connection on the mask side of set-up:	cone in compliance with DIN EN ISO 5356-1, Ø 22 mm
Connection on the hose side of set-up:	Ø 21.5 mm, 1° Cone suitable for hoses of elastomer with an inner connector with Ø 20–21 mm
Therapy pressure range:	4–40 hPa
Weight:	15 g
Temperature range:	operation: +5 °C to +40 °C storage: –20 °C to +70 °C
Flow resistance:	at 50 l/min: 0.04 hPa at 100 l/min: 0.18 hPa
Sound pressure level at 10 hPa:	28 dB(A)
Usable life:	6 months; 12 months with good care, depending on frequency of use and cleaning
Material:	polycarbonate (PC)

1 hPa ± 1 mbar

	Noise Suppressor
Technical Data	
Product class as per 93/42/EEC:	II a
Connecting piece:	suitable for connection to conical connector with a diameter of 22 mm in conformance with DIN EN ISO 5356-1
Connection sleeve:	Ø 22.7 mm, 1° external cone, suitable for elastomeric hoses with a connection diameter of 20 to 22 mm
Therapy pressure range:	4–40 hPa
Weight:	20 g
Temperature range:	operation: +5 °C to +40 °C storage: –20 °C to +70 °C
Maximum humidity in hose:	95 % rel. humidity (no condensation)
Flow resistance:	at 50 l/min: 0.07 hPa at 100 l/min: 0.25 hPa
Sound pressure level at 10 hPa:	23.4 dB(A)
Usable life:	3 months; with conscientious care 6 months, depending on frequency of use and cleaning
Materials:	sleeve: polycarbonate (PC) connecting piece: polycarbonate (PC) porous filter: polyethylene (PE)

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